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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS-R4-ES-2013-0040; 4500030114]

RIN 1018-AZ79

Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for *Agave eggersiana*, *Gonocalyx concolor*, and *Varronia rupicola*

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), propose to designate critical habitat for three Caribbean plants, *Agave eggersiana*, *Gonocalyx concolor*, and *Varronia rupicola*, under the Endangered Species Act of 1973, as amended (Act). The effect of this rule, if it is made final, would be to conserve habitat for these three Caribbean plants under the Act.

DATES: We will accept comments received or postmarked on or before [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]. Comments submitted electronically using the Federal eRulemaking Portal (see **ADDRESSES** section, below) must be received by 11:59 p.m. Eastern Time on the closing date. We must receive requests for public hearings, in writing, at the address shown in **FOR FURTHER INFORMATION CONTACT** by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may submit comments by one of the following methods:

(1) *Electronically:* Go to the Federal Rulemaking Portal:

<http://www.regulations.gov>. In the Search box, enter FWS–R4–ES–2013–0040, which is the docket number for this rulemaking. Then, in the Search panel on the left side of the screen, under the Document Type heading, click on the Proposed Rules link to locate this document. You may submit a comment by clicking on “Comment Now!”

(2) *By hard copy:* Submit by U.S. mail or hand-delivery to: Public Comments Processing, Attn: FWS–R4–ES–2013–0040; Division of Policy and Directives Management; U.S. Fish and Wildlife Service; 4401 N. Fairfax Drive, MS 2042–PDM; Arlington, VA 22203.

We request that you send comments **only** by the methods described above. We will post all comments on <http://www.regulations.gov>. This generally means that we will post any personal information you provide us (see the **Information Requested** section below for more information).

The coordinates or plot points or both from which the critical habitat maps are generated are included in the administrative record for this rulemaking and are available at <http://www.fws.gov/caribbean/es>, at <http://www.regulations.gov> at Docket No. FWS–R4–ES–2013–0040, and at the Caribbean Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**). Any additional tools or supporting information that we may develop for this rulemaking will also be available at the Fish and Wildlife Service website and Field Office set out above, and may also be included at <http://www.regulations.gov>.

FOR FURTHER INFORMATION CONTACT: Marelisa Rivera, Deputy Field Supervisor, U.S. Fish and Wildlife Service, Caribbean Ecological Services Field Office, P.O. Box 491, Road 301 Km. 5.1, Boquerón, PR 00622; by telephone (787) 851-7297; or by facsimile (787) 851-7440. Persons who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 800–877–8339.

SUPPLEMENTARY INFORMATION:

Executive Summary

Why we need to publish a rule. Under the Act, the Service shall designate critical habitat for any species or subspecies that is determined to be an endangered or threatened species, to the maximum extent prudent and determinable. Designations of critical habitat can only be completed by issuing a rule. Elsewhere in today’s **Federal Register**, we propose to list *Agave eggersiana* and *Gonocalyx concolor* as endangered species, and *Varronia rupicola* as a

threatened species, under the Act.

This rule consists of a proposed rule to designate critical habitat for *Agave eggersiana*, *Gonocalyx concolor*, and *Varronia rupicola* under the Act. Specifically, we propose to:

- Designate approximately 50.6 acres (ac) (20.5 hectares (ha)) of critical habitat for *A. eggersiana* in St. Croix, United States Virgin Islands (USVI).
- Designate approximately 198 ac (80.1 ha) for *G. concolor* in Puerto Rico.
- Designate approximately 6,547 ac (2,648 ha) for *V. rupicola* in southern Puerto Rico and Vieques Island.

The basis for our action. Under section 4(b)(2) of the Act, that the Secretary shall designate critical habitat on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant impact of specifying any particular area as critical habitat. The Secretary may exclude an area from critical habitat if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless she determines, based on the best scientific data available, that the failure to designate such area as critical habitat will result in the extinction of the species.

We will seek peer review. We are seeking comments from knowledgeable individuals with scientific expertise to review our analysis of the best available science and application of that science and to provide any additional scientific information to improve this proposed rule.

Because we will consider all comments and information we receive during the comment period, our final designations may differ from this proposal.

Information Requested

We intend that any final action resulting from this proposed rule will be based on the best scientific and commercial data available and be as accurate and as effective as possible.

Therefore, we request comments or information from the public, other concerned governmental agencies, Native American tribes, the scientific community, industry, or any other interested parties concerning this proposed rule. We particularly seek comments concerning:

(1) The reasons why we should or should not designate habitat as “critical habitat” under section 4 of the Act (16 U.S.C. 1531 *et seq.*), including whether there are threats to the species from human activity, the degree of which can be expected to increase due to the designation, and whether that increase in threats outweighs the benefit of designation such that the designation of critical habitat is not prudent.

(2) Specific information on:

(a) The amount and distribution of *Agave eggersiana*, *Gonocalyx concolor*, and *Varronia rupicola* (which we refer to collectively as the three Caribbean plants) and their habitat;

(b) What areas, that were occupied at the time of listing (or are currently occupied) and that contain features essential to the conservation of the species, should be included in the designation and why;

(c) Special management considerations or protection that may be needed in critical habitat areas we are proposing, including managing for the potential effects of climate change; and

(d) What areas not occupied at the time of listing are essential for the conservation of the species and why.

(3) Land use designations and current or planned activities in the areas occupied by the species or proposed to be designated as critical habitat, and possible impacts of these activities on this species and proposed critical habitat.

(4) Information on the projected and reasonably likely impacts of climate change on the three Caribbean plants and proposed critical habitat.

(5) Any foreseeable economic, national security, or other relevant impacts that may result from designating any area that may be included in the final designation. We are particularly interested in any impacts on small entities, and the benefits of including or excluding areas from the proposed designation that are subject to these impacts.

(6) Whether any specific areas we are proposing for critical habitat designation should be considered for exclusion under section 4(b)(2) of the Act, and whether the benefits of potentially excluding any specific area outweigh the benefits of including that area under section 4(b)(2) of the Act.

(7) Whether we could improve or modify our approach to designating critical habitat in any way to provide for greater public participation and understanding, or to better accommodate public concerns and comments.

Include sufficient information with your submission (such as scientific journal articles or other publications) to allow us to verify any scientific or commercial information you include.

Note that submissions merely stating support for or opposition to the action under consideration without providing supporting information, although noted, will not be considered in making a determination, as section 4(b)(2) of the Act directs that determinations as to whether

to designated critical habitat for any listed species must be made “on the basis of the best scientific and commercial data available.”

You may submit your comments and materials concerning this proposed rule by one of the methods listed in the **ADDRESSES** section. We request that you send comments **only** by the methods described in the **ADDRESSES** section.

We will post your entire comment—including your personal identifying information—on <http://www.regulations.gov>. You may request at the top of your document that we withhold personal information such as your street address, phone number, or e-mail address from public review; however, we cannot guarantee that we will be able to do so.

Comments and materials we receive, as well as supporting documentation we used in preparing this proposed rule, will be available for public inspection on <http://www.regulations.gov>, or by appointment, during normal business hours, at the U.S. Fish and Wildlife Service, Caribbean Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Previous Federal Actions

All previous Federal actions are described in the proposal to list the *Agave eggersiana* and *Gonocalyx concolor* as endangered species, and *Varronia rupicola* as a threatened species, which is published elsewhere in today’s **Federal Register**.

Background

Critical habitat is defined in section 3 of the Act as:

(1) The specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the Act, on which are found those physical or biological features:

(a) Essential to the conservation of the species, and

(b) Which may require special management considerations or protection; and

(2) Specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Conservation, as defined under section 3 of the Act, means to use and the use of all methods and procedures that are necessary to bring an endangered or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

Critical habitat receives protection under section 7 of the Act through the requirement that Federal agencies ensure, in consultation with the Service, that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of critical habitat. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Such designation does not allow the government or public to access private lands. Such designation does not require implementation of restoration, recovery, or enhancement measures by non-Federal landowners. Where a landowner requests Federal agency funding or authorization for an action that may affect a listed species or critical habitat, the consultation requirements of section 7(a)(2) of the Act would

apply, but even in the event of a destruction or adverse modification finding, the obligation of the Federal action agency and the landowner is not to restore or recover the species, but to implement reasonable and prudent alternatives to avoid destruction or adverse modification of critical habitat.

Under the first prong of the Act's definition of critical habitat, areas within the geographical area occupied by the species at the time it was listed are included in a critical habitat designation if they contain physical or biological features (1) essential to the conservation of the species, and (2) which may require special management considerations or protection. For these areas, critical habitat designations identify, to the extent known using the best scientific and commercial data available, those physical or biological features essential to the conservation of the species (such as space, food, cover, and protected habitat). In identifying those physical or biological features within an area, we focus on the principal biological or physical constituent elements (primary constituent elements such as roost sites, nesting grounds, seasonal wetlands, water quality, tide, soil type) that are essential to the conservation of the species. Primary constituent elements are those specific elements of the physical or biological features that provide for a species' life-history processes and are essential to the conservation of the species.

Under the second prong of the Act's definition of critical habitat, we can designate critical habitat in areas outside the geographic area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. For example, an area currently occupied by the species but that was not occupied at the time of listing may be essential to the conservation of the species and may be included in the critical habitat designation. We designate critical habitat in areas outside the geographic area occupied by a species only when a designation limited to its range would be inadequate to ensure the

conservation of the species.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific data available. Further, our Policy on Information Standards under the Endangered Species Act (published in the **Federal Register** on July 1, 1994 (59 FR 34271)), the Information Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106-554; H.R. 5658)), and our associated Information Quality Guidelines, provide criteria, establish procedures, and provide guidance to ensure that our decisions are based on the best scientific data available. They require our biologists, to the extent consistent with the Act and with the use of the best scientific data available, to use primary and original sources of information as the basis for recommendations to designate critical habitat.

When we are determining which areas should be designated as critical habitat, our primary source of information is generally the information developed during the listing process for the species. Additional information sources may include the recovery plan for the species, articles in peer-reviewed journals, conservation plans developed by States and counties, scientific status surveys and studies, biological assessments, other unpublished materials, or experts' opinions or personal knowledge.

Habitat is dynamic, and species may move from one area to another over time. Climate change will be a particular challenge for biodiversity because the interaction of additional stressors associated with climate change and current stressors may push species beyond their ability to survive (Lovejoy 2005, pp. 325-326). The synergistic implications of climate change and habitat fragmentation are the most threatening facet of climate change for biodiversity (Hannah and Lovejoy 2005, p. 4). Current climate change predictions for terrestrial areas in the Northern Hemisphere indicate warmer air temperatures, more intense precipitation events, and

increased summer continental drying (Field *et al.* 1999, pp. 1-3; Hayhoe *et al.* 2004, p. 12422; Cayan *et al.* 2005, p. 6; Intergovernmental Panel on Climate Change (IPCC) 2007, p. 1181). Climate change may lead to increased frequency and duration of severe storms and droughts (Golladay *et al.* 2004, p. 504; McLaughlin *et al.* 2002, p. 6074; Cook *et al.* 2004, p. 1015).

We recognize that critical habitat designated at a particular point in time may not include all of the habitat areas that we may later determine are necessary for the recovery of the species. For these reasons, a critical habitat designation does not signal that habitat outside the designated area is unimportant or may not be needed for recovery of the species. Areas that are important to the conservation of a listed species, both inside and outside the critical habitat designation, will continue to be subject to: (1) Conservation actions implemented under section 7(a)(1) of the Act, (2) regulatory protections afforded by the requirement in section 7(a)(2) of the Act for Federal agencies to ensure their actions are not likely to jeopardize the continued existence of any endangered or threatened species, and (3) section 9 of the Act's prohibitions on taking any individual of the species, including taking caused by actions that affect habitat. Federally funded or permitted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans, habitat conservation plans (HCPs), or other species conservation planning efforts if new information available at the time of these planning efforts calls for a different outcome.

Prudency Determination

Section 4(a)(3) of the Act, as amended, and its implementing regulations (50 CFR 424.12) require that, to the maximum extent prudent and determinable, the Secretary designate critical habitat at the time the species is determined to be an endangered or threatened species. Our regulations (50 CFR 424.12(a)(1)) state that the designation of critical habitat is not prudent when one or both of the following situations exist:

(1) The species is threatened by taking or other human activity, and identification of critical habitat can be expected to increase the degree of threat to the species, or

(2) Such designation of critical habitat would not be beneficial to the species.

There is currently no imminent threat of take attributed to collection or vandalism (see the discussion under Factor B in the proposed listing rule, which is published elsewhere in today's **Federal Register**) for *Gonocalyx concolor* and *Varronia rupicola*. Although there may be a possible immediate threat of take attributed to collection or vandalism for *Agave eggersiana*, the identification and mapping of critical habitat is not expected to intensify the threat to *A. eggersiana*. We have no evidence that collection or vandalism is a current threat to *A. eggersiana*. Even if we did, general agave locations are already published on the web, so publication of location information in connection with this proposed designation should not intensify such a threat.

In the absence of a finding that the designation of critical habitat would increase threats to a species, if there are any benefits to a critical habitat designation, then we may find that such designation is prudent. Here, the potential benefits of designation include: (1) Triggering consultation under section 7 of the Act, in new areas for actions in which there may be a Federal nexus where it would not otherwise occur because, for example, it is or has become unoccupied or the occupancy is in question; (2) focusing conservation activities on the most essential

features and areas; (3) providing educational benefits to State or county governments or private entities; and (4) preventing people from causing inadvertent harm to the species.

Therefore, because we have determined that the designation of critical habitat would not likely increase the degree of threat to the species and may provide some measure of benefit, we find that designation of critical habitat is prudent for *Agave eggersiana*, *Gonocalyx concolor*, and *Varronia rupicola*.

Critical Habitat Determinability

Having determined that designation is prudent, under section 4(a)(3) of the Act, we must find whether critical habitat for the three Caribbean plants is determinable. Our regulations at 50 CFR 424.12(a)(2) state that critical habitat is not determinable if information sufficient to perform required analyses of the impacts of the designation is lacking, or the biological needs of the species are not sufficiently well known to permit identification of an area as critical habitat.

We reviewed the available information pertaining to the biological needs of the species and habitat characteristics where the species are located. This and other information represent the best scientific data available and have led us to conclude that the designation of critical habitat is determinable for *Agave eggersiana*, *Gonocalyx concolor*, and *Varronia rupicola*.

Physical or Biological Features

In accordance with section 3(5)(A)(i) and 4(b)(1)(A) of the Act and regulations at 50

CFR 424.12, in determining which areas within the geographic area occupied by the species at the time of listing to designate as critical habitat, we consider the physical or biological features (PBFs) that are essential to the conservation of the species and which may require special management considerations or protection. These include, but are not limited to:

- (1) Space for individual and population growth and for normal behavior;
- (2) Food, water, air, light, minerals, or other nutritional or physiological requirements;
- (3) Cover or shelter;
- (4) Sites for breeding, reproduction, or rearing (or development) of offspring; and
- (5) Habitats that are protected from disturbance or are representative of the historical, geographic, and ecological distributions of a species.

We derive the specific physical or biological features required for the three Caribbean plants from studies and observations of the three species' habitat, ecology, and life history as described below. Unfortunately, little is known of the specific habitat requirements for the three Caribbean plants. To identify the physical and biological needs of the species, we have relied on current conditions at locations where the three species exist and the limited information available for these species.

Space for Individual and Population Growth and for Normal Behavior

Agave eggersiana

Agave eggersiana is endemic to the island of St. Croix, USVI. The species is found growing in the subtropical dry forest zone, which covers about 72 percent of the surface of St.

Croix. The variables used to delineate any given life zone are defined by mean annual precipitation and mean annual bio-temperature (Ewel and Whitmore 1973, p. 2), and are characterized by an association of animals and plants (Mac *et al.* 1998, p. 317). Subtropical dry forests are lowland semi-deciduous and lowland drought deciduous forest. The vegetation in this life zone usually consists of a nearly continuous, single-layered canopy, with little ground cover. Tree heights usually do not exceed 49 feet (ft) (15 meters (m)) and crowns are typically broad, spreading, and flattened (Ewel and Whitmore 1973, p. 10).

Dry forest structure is greatly influenced by wind, salt spray and the presence of fresh water. Some of the native tree species that are common in subtropical dry forest in the USVI are *Bursera simaruba* (L.) Sarg. (gumbo limbo), *Amyris elemifera* L. (torch wood), *Capparis cynophallophora* L. (Jamaican caper), *Cordia rickseckeri* Millsp. (black manjack), *Pisonia subcordata* Sw. (water mampoo), *Plumeria alba* L. (white frangipani), and *Pictetia aculeata* (Vahl) Urban (fustic) (Brandeis and Oswalt, 2007, p. 13; Ewel and Whitmore 1973, p. 16; Chakroff 2010, p. 8).

Plant communities where *Agave eggersiana* occurs are coastal cliffs with sparse or no vegetation and coastal shrubland areas. The plant community in these areas is predominately native vegetation and either no competitive, nonnative, invasive plant species or such species in quantities low enough to have minimal effects on the survival of *A. eggersiana*. These communities and their associated native plant species are provided in the Status Assessment for *A. eggersiana* (see *Habitat* section of our proposed listing rule, which is published elsewhere in today's **Federal Register**).

Therefore, based on the above information, we identify the vegetation composition areas (e.g., dry coastal cliffs and dry shrubland) as an essential physical or biological feature for this

species.

Gonocalyx concolor

Gonocalyx concolor is a Puerto Rican endemic plant species that has been found growing only in the elfin and ausubo (*Manilkara bidentata*) forests within the Carite Commonwealth Forest, which lies within the municipalities of Cayey, Patillas, and San Lorenzo in east-central Puerto Rico. Zonation of forests within montane habitats on tropical islands is condensed into a narrow altitudinal range (Weaver *et al.* 1986, p. 79). Both the elfin and ausubo forests are within the subtropical lower montane very wet forest life zone and have similar climate conditions (Ewel and Whitmore 1973, p. 32).

The elfin forest is found on exposed peaks and ridges of Cerro La Santa, above 2,900 ft (880 m) in elevation from sea level, occupying approximately 24.9 acres (ac) (10.1 hectares (ha)) in the Carite Commonwealth Forest (Silander *et al.* 1986, p. 178). The elfin forest vegetation is characterized by gnarled trees less than 7 meters tall, high basal area, small diameters, a large number of stems per unit area, and extremely slow growth rates (Ewel and Whitmore 1973, p. 45). The vegetation is commonly saturated with moisture, frequently enveloped in clouds, and both aerial and superficial roots are common (Weaver *et al.* 1986, p. 79). The plant association in this area is generally comprised by few species of native trees and native ferns, and is dense with epiphytes, including bromeliads and mosses (Weaver *et al.* 1986, p. 79). The native tree composition includes: *Tabebuia schumanniana* (roble colorado), *Tabebuia rigida* (roble de sierra), *Ocotea spathulata* (nemoca cimarrona), *Eugenia borinquensis* (guayabota), *Clusia minor* (cupey de monte), and *Prestoea acuminata* var. *montana* (sierra palm) (Weaver *et al.* 1986, p.

80; Silander *et al.* 1986, p. 191). Additionally, some areas were planted with *Eucalyptus robusta* (O. Monsegur, UPRM, unpublished data, 2006).

The ausubo forest is only found along the Rio Grande de Patillas River basin and intermittent streams between 2,000 ft (620 m) and 2,300 ft (720 m) of elevation (DNR 1976, p. 169); occupying approximately 179.2 ac (72.5 ha) in the Charco Azul area within the Carite Commonwealth Forest (Silander *et al.* 1986, p.190). The ausubo forest is characterized by evergreen vegetation, high species richness, rapid growth rate of successional trees, epiphytic ferns, bromeliads, and orchids (Ewel and Whitmore 1973, p. 32). The vegetation in this area is generally comprised of native trees (i.e., *Manilkara bidentata* (ausubo), *Dacryodes excelsa* (tabonuco), *Guarea guidonia* (guaraguao), and *Cyrilla racemiflora* (swamp titi)) (Francis and Lowe 2000, p. 345; DNER 2008, p. 2).

Gonocalyx concolor has been found growing on the canopy of the tallest tree areas, growing on tree trunks (epiphytic), clambering (using other vegetation as support), and laying on the litter in the forest floor (C. Pacheco and O. Monsegur, Service, unpublished report, 2013, p. 3). The life history of this species has not been studied; however, it seems that the elfin and the ausubo forests provide space for individuals and population growth of *G. concolor*. Furthermore, the climate in these forests appears to support the normal behavior, growth, and viability of *G. concolor* during most of its life stages; suggesting the species may be a dwell obligate of these types of habitat, as it has not been found elsewhere. Changes in temperature, humidity, and solar insolation result in changes in habitat condition and vegetation composition, with serious effects on *G. concolor*. (See the **Summary of Factors Affecting the Species** section of our proposed listing rule, which is published elsewhere in today's **Federal Register**).

Therefore, based on the above information, we identify the vegetation composition found

in the elfin and the ausubo forests as an essential physical or biological feature for this species.

Varronia rupicola

Varronia rupicola is a Puerto Rican bank (biogeographical area) endemic that grows within the subtropical dry forest life zone overlying a limestone substrate (Ewel and Whitmore 1973, p. 72). The Puerto Rican bank is a geographical unit that includes the main island of Puerto Rico, Vieques, Culebra, the USVI (excluding St. Croix), and the Island of Anegada. In Puerto Rico, this life zone is mainly located on the south coast extending 74 miles (mi) (120 kilometers (km)) from the Municipality of Cabo Rojo to the Municipality of Guayama, and to the eastern of Puerto Rico, including the Island of Vieques (Ewel and Whitmore 1973, p. 72; Murphy and Lugo 1986, p. 89).

The species has been recorded in forested hills with open to relatively dense scrub and shrub lands 6.5 to 9.8 ft (2 to 3 m) in height; in low forest with canopy from 8 to 15 ft (3 to 5 m) high; and at the edge of a dense, low, coastal shrubland and forest. *Varronia rupicola* is associated with dry forest native vegetation dominated by *Gymnanthes lucida* (shiny oysterwood, or yaití), *Exostema caribaeum* (princewood, or albarillo), *Pisonia albida* (corcho), *Pictetia aculeata* (fustic, or tachuelo), *Thouinia portoricensis* (ceboruquillo, or serrazuela), *Coccoloba krugii* (whitewood), *Pilosocereus royenii* (Royen's tree cactus, or sebucán), *Bursera simaruba* (gumbo limbo, or almacigo), *Erithalis fruticosa* (black torch), *Guettarda krugii* (frogwood, or cucubano), *Tabebuia heterophylla* (pink trumpet tree, or roble), *Hypelate trifoliata* (inkwood), *Coccoloba diversifolia* (pigeonplum, or uvilla), *Cassine xylocarpa* (marbletree, or coscorrón), *Krugiodendron ferreum* (black ironwood, or palo de hierro), *Jacquinia berterii* (barkwood),

Bourreria succulenta (strongbark, or palo de vaca), *Crossopetalum rhacoma* (maidenberry, or pico de paloma), *Antirhea acutata* (placa chiquitu, or quina), and *Amyris elemifera* (torchwood).

In the island of Anegada (British Virgin Islands), *Varronia rupicola* was found in open limestone pavement and sand dunes. During a recent study in this Island, the species was found in higher abundance (based on percentage occurrence across plots) on limestone, but also widespread within the sand dunes (Clubbe *et al.* 2004, p. 344).

Therefore, based on the above information, we identify remnants of scrubland and shrubland forest that occurs within the subtropical dry forest life zone overlying limestone substrate as an essential physical or biological feature for this species.

Food, Water, Air, Light, Minerals, or Other Nutritional or Physiological Requirements

Agave eggersiana

The island of St. Croix, USVI, is located in the Caribbean, where the warm sea stabilizes air temperatures and diurnal temperature changes approximate annual fluctuations. The mean annual temperature of the region at sea level is lower than 75 degrees Fahrenheit (°F) (24 degrees Celsius (°C)). This subtropical climate results from the location of St. Croix at the lower limit of the tropical region (Ewel and Whitmore 1973 p. 8; Mac *et al.* 1998, p. 315).

The island of St. Croix has easterly trade winds of 15 miles per hour (24 kilometers per hour) or more, which keep the humidity relatively low (Chakroff 2010, p. 7). This island is much drier than most of the Greater Antilles, averaging 40 inches (in) (102 centimeters (cm)) of rain in the west, and about 30 in (76 cm) in the east. Rain usually comes in the form of brief

tropical showers. The wettest and hottest months are July to October. Hurricane season falls within these same months, with September being the most active for tropical storms. The USVI have been hit by four major hurricanes in recent years: Hugo (1989), Luis and Marilyn (1995), Lenny (1999), and Omar (2008) (Mac *et al.* 1998, p. 316; Chakroff 2010, p. 7; http://www.srh.noaa.gov/sju/?n=mean_annual_precipitation2). The average mid-island temperature is 78.8 °F (26 °C), with a variation of only 5 to 9 °F (3 to 5 °C) between the warmest and coolest months (Mac *et al.* 1998, p. 316). This type of climate regime regulates the dry forest structure conditions necessary for the establishment of the species.

Soils substrates supporting *Agave eggersiana* for anchoring or nutrient absorption vary depending on the habitat and location. The natural populations of *A. eggersiana* grow on top of various soil classifications. Cramer, Glynn, Hasselberg, Southgate, and Victory series are among the ones where the species can be found. The general description of the soils mentioned above are provided in the Status Assessment for *A. eggersiana* (see Habitat section of our proposed listing rule, which is published elsewhere in today's **Federal Register**). The soils are all well-drained, and although there are rainy months, the ground does not retain excess water and change the vegetation of the dry forest structure.

Therefore, based on the information above, we identify the dry climate regime that regulates the dry forest structure and the well-drained soils of Cramer, Glynn, Hasselberg, Southgate, and Victory series to be physical or biological features for this species.

Gonocalyx concolor

The variables used to delineate any given life zone are mean annual precipitation and

mean annual temperature. The life zones and associations of which they are comprised only define the potential vegetation or range of vegetation types that might be found in an area (Ewel and Whitmore 1973, p. 5). The mean annual precipitation at the Carite Commonwealth Forest is 88.7 in (225.3 cm), with February to April the drier months (NOAA 2013, http://www.srh.noaa.gov/sju/?n=climo_cayey). The mean temperature is 72.3 °F (22.7 °C), varying from 68 °F (20 °C) in January to 73 °F (24 °C) in July (Silander *et al.* 1986, p.183).

The Carite Commonwealth Forest is underlain by volcanic-sedimentary rock (DNR 1976, p. 168). The forest topography is rough and highly dissected by intermittent streams, with steep slopes ranging from 20 to 60 percent. The forest's soil is primarily comprised by Los Guineos complex (Silander *et al.* 1986, p. 179). Los Guineos soils were formed from residuum gathering from sandstone parental material and consist of very deep, acidic, clayey, well-drained soils on side slopes of mountains (NRCS 2013, p. 11). This type of soil occupies more than 80 percent (5,860.1 ac (2,371.5 ha)) of the Carite Commonwealth Forest, at elevations from 1,900 ft (580 m) to 3,000 ft (900 m) from sea level (Silander *et al.* 1986, p. 179).

Therefore, based on the information above, we identify mean annual precipitation of 88.7 in (225.3 cm), mean annual temperature of 72.3 °F (22.7 °C), and Los Guineos type of soil (i.e., very deep, acidic, clayey, well-drained soils on side slopes of mountains) to be physical or biological features for this species.

Varronia rupicola

Like *Agave eggersiana*, *Varronia rupicola* occurs within the subtropical dry forest life zone (*sensu* Holdridge 1967). Moisture availability as a function of shallow soils plus low

rainfall and its seasonality determines the forest productivity, growth characteristics, water loss, and physiognomy in subtropical dry forest life zones where temperature tends to be constant throughout the year (Lugo *et al.* 1978, p. 278). Average rainfall for the Guánica Forest (important area for the species in Puerto Rico) is 860 mm (Lugo *et al.* 1996, p. 2).

The majority of the suitable habitat and known populations of *Varronia rupicola* in Puerto Rico lie within the Ponce limestone formation, a Mid-Tertiary pink to white, fine-grain limestone (Lugo *et al.* 1996, p. 2). In Puerto Rico, this formation extends from the western end of the Guánica Commonwealth Forest, east toward the Municipality of Ponce (El Tuque). The soils at the Guánica Forest are described as shallow, alkaline, and derived from limestone rock (Molina and Lugo 2006, p.355). According to Murphy and Lugo (1986, p. 56), these soils are nutrient-rich, but only a small fraction of the total phosphate and potassium is readily available. These soil factors increase the effects of low rainfall and its seasonality on the vegetation.

Therefore, based on the information above, we identify shallow and alkaline soils derived from limestone rock and an average rainfall of 34 in (86 cm) to be physical or biological features for this species.

Cover or Shelter

Agave eggersiana

Agave eggersiana occurs in open canopy and open understory habitats and thrives in areas of full sun exposure (O. Monsegur and M. Vargas, Service, pers. obs. 2010 and 2013). The coastal shrublands typically show a low canopy, ranging from 3.2 to 16.4 ft (1 to 5 m) (Moser *et*

al. 2010, Appendix A, p. 8-11; O. Monsegur and M. Vargas, Service, pers. obs. 2013). In areas where native species remains dominant and nonnatives have not occupied the understory, these coastal shrublands provide suitable habitat for the natural recruitment of *A. eggersiana*. In addition, the bare rock of coastal cliffs seems to provide an ecological niche for *A. eggersiana*. Once the species gets established on cliff areas, it may become dominant as observed on the South Shore (Cane Garden) population. Therefore, based on the information above, we identify open cover habitats (e.g., open canopy or open understory) to be physical or biological features for this species.

Gonocalyx concolor

Very little is known about habitat parameters specifically relating to cover or shelter for *Gonocalyx concolor*. In remnants and late successional vegetation of elfin forest, the species is normally found growing as epiphytic and clambering on dead and live stand trees, and crawling over the forest floor (C. Pacheco and O. Monsegur, Service, unpublished data, 2013). In the ausubo forest, this species has been described growing only as epiphytic and clambering on dead and live stand trees (O. Monsegur, unpublished data, 2006). Both types of forest show a single canopy layer that seldom exceeds 22 ft (7 m) in height. Therefore, based on the information above, we identify the remnants and late successional vegetation of elfin and ausubo forests with a single canopy layer of about 22 ft (7 m) in height to be physical or biological features for this species.

Varronia rupicola

This species has been recorded in forested hills with open to relatively dense shrublands ranging between 6.5 to 9.8 ft (2 to 3 m) in height; in low forest with canopy from 8 to 15 ft (3 to 5 m) high; and at the edge of a dense, low, coastal shrubland and forest. On the island of Anegada, the species is located on open limestone pavement and sand dunes. Despite the species' preference for gaps, it remains associated to remnants of native forest.

In a recent study at Anegada, *Varronia rupicola* was found in higher abundance (based on percentage occurrence across plots) on limestone, but also widespread within the sand dunes (Clubbe *et al.* 2004, p. 344). This kind of forest structure provides protection against environmental variation and stochastic events, allowing the species to recover without compromising population numbers. The species is associated to remnants of native dry forest vegetation. At the Guánica Commonwealth Forest, the most abundant species are *Gymnanthes lucida*, *Exostema caribaeum*, *Pisonia albida*, *Pictetia aculeata*, *Thouinia portoricensis*, *Coccoloba krugii*, and *Pilosocereus royenii* (Murphy and Lugo 1986, p. 91). These species account for 50 percent of the importance value (abundance) within the forest and characterize the Deciduous Forest and Scrub Forest vegetation described by Murphy *et al.* (1995, p. 187). Other dominant species within the *V. rupicola* habitat include *Bursera simaruba*, *Erithalis fruticosa*, *Guettarda krugii*, *Tabebuia heterophylla*, *Hypelate trifoliata*, *Coccoloba diversifolia*, *Cassine xylocarpa*, *Krugiodendron ferreum*, *Jacquinia berterii*, *Bourreria succulenta*, *Crossopetalum rhacoma*, *Antirhea acutata*, and *Amyris elemifera* (Murphy and Lugo 1986, p. 91). The species is also associated to a shrub layer dominated by *Croton humilis*, *Eupatorium sinuatum*, *Lantana reticulata*, and *Turnera diffusa*.

Therefore, based on the information above, we identify forested hills with open to relatively dense shrubland forest dominated by native species to be physical or biological features for this species.

Sites for Breeding, Reproduction, or Rearing (or Development) of Offspring

Agave eggersiana

Agave eggersiana dies after producing flowers (monocarpic life cycle) and produces a large flowering scape (massive inflorescence; a group or cluster of flowers arranged on a stem that is composed of a main branch or a complicated arrangement of branches) (Rogers 2000, p. 218). After flowering, the panicles (inflorescence) produce numerous small vegetative bulbs (bulbils) (Proctor and Acevedo-Rodríguez 2005, p. 118). The small vegetative bulbils will fall near the parental agave and attach to the ground on the coastal cliffs and dry coastal shrubland. Coastal cliffs, which include bare rock or sparse native vegetation, create an environment where the canopy is less than 1 meter in height, and allow the bulbils to compete for ground area. The dry coastal shrubland includes dry forest structures where the open canopy and open understory habitat also allows the bulbils to compete for ground area. These open canopy or open understory structures allow *A. eggersiana* good sun exposure where the species seems to thrive (for further discussion of these communities and their associated native plant species, see the Status Assessment for *A. eggersiana* in the *Habitat* section of our proposed listing rule, published elsewhere in today's **Federal Register**). Therefore, based on the information above, we identify the vegetation communities in the coastal cliffs and dry coastal shrublands where *A.*

eggersiana occurs to be physical or biological features for this species.

Gonocalyx concolor

The reproductive biology and ecology of *Gonocalyx concolor* have not been studied. We have no information available beyond the habitat where the species is found and its behavior in that habitat. However, as indicated above, it seems that the conditions of the elfin and ausubo forests support the normal behavior, growth, and viability of *G. concolor* during most of its life stages. Therefore, based on the information above, we identify the elfin and ausubo forests to be physical or biological features for this species.

Varronia rupicola

Varronia rupicola has been reported flowering and fruiting in December to January (Breckon and Kolterman 1996, p. 4), and in June-July (Monsegur and Breckon 2007, p. 1). Fruit production in the wild at the Guánica Commonwealth Forest and in the Municipality of Ponce seem to be high, and there is evidence of recruitment associated to the majority of the clusters of individuals (Monsegur, USFWS, pers. obs. 2013). Under greenhouse conditions, seed germination has been reported at no less than 67 percent (Wenger *et al.* 2010, p. 23). Germination in the wild has also been observed to be high, particularly on shrubs growing exposed to sunlight. However, there seems to be a high mortality (natural thinning) of seedlings, and only a few individuals make the transition to sapling stages (O. Monsegur, Service, pers. obs. 2013). Furthermore, despite the showy red fruits of *V. rupicola*, its dispersion seems to be

limited by gravity, as the majority of the seedlings lie under the parent tree or downslope. The wide range of the species suggests a former animal disperser, probably a bird.

Material germinated in the Service greenhouse at Cabo Rojo National Wildlife Refuge flowered and produced fruits about 1 year after planted (O. Monsegur, Service, pers. obs. 2013). The rapid development of the species as reproductive individuals, and the finding of individuals along recently disturbed sites (i.e., new dirt roads) and natural forest gaps, may indicate that *Varronia rupicola* is an early colonizer (pioneer) species of dry coastal forest. The above information highlights the importance of open to relatively low dense shrubland forest (scrub forest and deciduous forest or shrubland) dominated by native species for the self-recruitment of the species and sustainability of the natural populations. As previously mentioned, moisture availability as a function of shallow soils, plus low rainfall and its seasonality, are the factors suggested as determining forest productivity, growth characteristics, water loss, and physiognomy. The diversity within the dry coastal native forest of Puerto Rico is explained by the wide diversity of habitats produced by the proximity of the limestone basement to the surface and the subsequent variation in soil depth. These unique native forests provide the adequate and stable environmental conditions for the reproduction and natural recruitment of the species.

Therefore, based on the information above, we identify open to relatively dense shrubland forest (scrub forest and deciduous forest or shrubland) dominated by native species to be a physical or biological feature for this species.

Habitats Protected from Disturbance or Representative of the Historical, Geographic, and Ecological Distributions of the Species

Agave eggersiana

There are reports from Britton and Wilson (1923, p. 156) that *Agave eggersiana* occurred in the eastern dry areas in St. Croix. This area harbors dry forest conditions and native vegetation that provide suitable habitat for *A. eggersiana*. Most of that eastern end is currently owned and managed for conservation by the USVI Government and The Nature Conservancy. The upper slopes and steep areas of eastern St. Croix provide essential dry forest habitat conditions for the reintroduction and the recovery of the species. These forest harbors xeric native vegetation and forest structure that provides shelter, space for growing and breeding, and food and water resources necessary for the species. However, we do not have current evidence that *A. eggersiana* occurs in this area.

Since 2007, *Agave eggersiana* has been introduced within U.S. National Park Service (NPS) properties (i.e., Salt River National Park and Ecological Preserve, and Buck Island Reef Monument) that are outside the known historical range of the species. In addition, there is an intra-agency agreement under the Service's Coastal Program to restore habitat in the area and plant native flora in Salt River National Park and Ecological Preserve. *A. eggersiana* is one of the plants used as part of the native plant restoration agreement.

Therefore, based on the information above, we identify the dry forest conditions in the eastern side of St. Croix to be part of the physical or biological features for this species.

Gonocalyx concolor

The elfin and the ausubo forest where *Gonocalyx concolor* currently exists are owned by the Commonwealth of Puerto Rico. This land has been managed for conservation by the Puerto Rico Department of Natural and Environmental Resources (DNER) since 1975 (back then, Department of Natural Resources; DNR 1976, p. 169). Before 1975, the elfin forest area in Cerro La Santa (Carite Commonwealth Forest) was managed by the Commonwealth of Puerto Rico as a preferred site for the installation of telecommunication tower facilities for television and radio, and for military and governmental purposes. These types of activities may have caused disturbance to the habitat of *G. concolor*, because Cerro La Santa is one of the two known locations of the species. Although the Carite Commonwealth Forest is under local government protection, the area of Cerro La Santa is still vulnerable to habitat modification resulting from maintenance and potential expansion of existing telecommunication facilities. Therefore, based on the information above, we identify the elfin and ausubo forests found within the Carite Commonwealth Forest to be physical or biological features for this species.

Varronia rupicola

The species has been historically recorded from the geographical area comprising the Guánica Commonwealth Forest in southwestern Puerto Rico, and the area of the Vieques National Wildlife Refuge (NWR) in the island of Vieques, eastern Puerto Rico. The Guánica Forest was designated as a Commonwealth forest in 1917, by Governor Arthur Yager, and has been protected and managed since 1930 (Lugo *et al.* 1996, p. 2; Murphy and Lugo 1990, p. 15). It is now the largest Commonwealth-protected area over limestone substrate in Puerto Rico, with an estimated area of about 10,872 ac (4,400 ha) (Miguel Canals, DNER, pers. comm. 2009). The

Guánica Commonwealth Forest is divided in two main contiguous areas: the east section, which includes the original forest area, and the west section, added after 1950 (Lugo *et al.* 1996, p. 2). This forest is considered one of the best examples of a subtropical dry forest in the world (Murphy and Lugo 1990, p. 15; Ewel and Whitmore 1973, p. 72). The Guánica Commonwealth Forest harbors remnants of native dry forest vegetation over limestone pavement, some of these considered as pristine forest. Since the forest have been protected and managed for over 90 years, native vegetation has recovered from previous deforestation for charcoal production. As a result of this, the forest harbors populations of several of the rarest plants endemic to the dry forest of Puerto Rico, and the presence of stands of invasive nonnatives remains associated to areas previously inhabited and along roads within the forest. However, it is important to notice that *Varronia rupicola* also occurs within privately owned lands outside the Guánica Commonwealth Forest, which makes it vulnerable to habitat destruction.

On Vieques Island, about 54 percent of the land is a National Wildlife Refuge managed by the Service (Vieques NWR CCP & EIS 2007, p. 2). Some areas within the refuge harbor suitable habitat for *Varronia rupicola*, providing protection to the species' habitat and probably to undetected populations (Vieques NWR CCP & EIS 2007, p. 2). However, only three patches of dry forest vegetation over limestone substrate that harbor *V. rupicola* populations have been currently identified in the island of Vieques and only two are located within the Vieques NWR. The remaining third patch belongs to the Commonwealth of Puerto Rico. These three natural areas are adjacent and represent the remnant of the prime habitat for the species in Vieques.

Therefore, based on the information above, we identify remnants of scrubland and shrubland forest that occurs within the subtropical dry forest life zone overlying limestone substrate to be physical or biological features for this species.

Primary Constituent Elements

Under the Act and its implementing regulations, we are required to identify the physical or biological features essential to the conservation of the three Caribbean plants in areas occupied at the time of listing, focusing on the features' primary constituent elements. We consider primary constituent elements (PCEs) to be the elements of physical or biological features that provide for a species' life-history processes and are essential to the conservation of the species.

Based on our current knowledge of the physical or biological features and habitat characteristics required to sustain the species' life-history processes, we determine the primary constituent elements specific for each of the three plants below:

Agave eggersiana

- (1) Areas consisting of coastal cliffs and dry coastal shrublands.
 - (a) Coastal cliff habitat includes:
 - (i) Bare rock; and
 - (ii) Sparse vegetation.
 - (b) Dry coastal shrubland habitat includes:
 - (i) Dry forest structure; and
 - (ii) A plant community of predominately native vegetation.
- (2) Well-drained soils from the series Cramer, Glynn, Hasselberg, Southgate, and

Victory.

(3) Habitat of sufficient area to sustain viable populations in the coastal cliffs and dry coastal shrublands listed in PCEs (1) and (2), above.

Gonocalyx concolor

(1) Elfin forest at elevations over 2,900 ft (880 m) in Cerro La Santa, Puerto Rico, which includes:

(a) Forest with single canopy layer with trees seldom exceeding 22 ft (7 m) in height.

(b) Associated native vegetation dominated by species such as *Tabebuia schumanniana*, *Tabebuia rigida*, *Ocotea spathulata*, *Eugenia borinquensis*, *Clusia minor*, and *Prestoea acuminata* var. *montana*, native ferns, and dense cover with epiphytes, including bromeliads and mosses.

(2) Ausubo forest at elevations between 2,000 to 2,300 ft (620 to 720 m) in the Charco Azul, which includes:

(a) Forest with single canopy layer with trees exceeding 22 ft (7 m) in height.

(b) Plant association comprised by few species of native trees and associated native vegetation (e.g., *Manilkara bidentata*, *Dacryodes excelsa*, *Guarea guidonia*, and *Cyrilla racemiflora*), native ferns, and dense cover with epiphytes, including bromeliads and mosses.

(3) The type locations described in PCEs (1) and (2), above, for this species should have mean annual precipitation of 88.7 in (225.3 cm), mean annual temperature of 72.3 °F (22.7 °C), and Los Guineos type of soil (i.e., very deep, acidic, clayey, well-drained soils on side slopes of

mountains).

Varronia rupicola

(1) Remnants of native shrubland and scrubland forest on limestone substrate within the subtropical dry forest life zone. Dry shrubland and scrubland forest includes:

- (a) Shrubland vegetation with canopy from 6.5 to 9.8 ft (2 to 3 m) high;
- (b) Limestone pavement;
- (c) Associated native vegetation; and
- (d) A shrub layer dominated by *Croton humilis*, *Eupatorium sinuatum*, *Lantana reticulata*, and *Turnera diffusa*.

(2) Semi-deciduous dry forest on limestone substrate within the subtropical dry forest life zone. Dry limestone semi-deciduous forest includes:

- (a) Low forest with canopy from 8 to 15 ft (3 to 5 m) high;
- (b) Limestone pavement;
- (c) Associated dry forest native vegetation; and
- (d) A shrub layer dominated by *Croton humilis*, *Eupatorium sinuatum*, *Lantana reticulata*, and *Turnera diffusa*.

(3) The type locations described in PCEs (1) and (2), above, for this species should have shallow and alkaline soils derived from limestone rock and an average rainfall of 34 in (86 cm).

Special Management Considerations or Protection

When designating critical habitat, we assess whether the specific areas within the geographic area occupied by the species at the time of listing contain features which are essential to the conservation of the species and which may require special management considerations or protection.

Agave eggersiana and *Varronia rupicola*

The primary threats to the PBFs that *Agave eggersiana* and *Varronia rupicola* depend on includes: (1) Habitat destruction and modification by development; (2) competition with nonnative plant species; (3) human-induced fire; and (4) hurricanes and storm surge. The majority of these threats can be addressed by special management considerations or protection, while others (e.g., hurricanes and storm surges) are beyond the control of land owners and managers.

Management activities that could ameliorate these threats include, but are not limited to, establishment of permanent conservation easements or land acquisition to protect the species and its habitat on private lands; establishment of conservation agreements on private, nongovernment, and government lands to protect the habitat; implementation of control of invasive, nonnative plant species to reduce competition and prevent habitat degradation; implementation of management practices to control fires; and creation or revision of management plans for the identification of the areas where current developments exist and to better guide the implementation of conservation measures for the species. For *Agave eggersiana*, precautions are needed to avoid inadvertent mowing and cutting of the species in the course of landscaping activities. In addition, for both *A. eggersiana* and *Varronia rupicola*,

development of residential and tourism projects should avoid impacting these habitats directly or indirectly, and habitat fragmentation should be limited as much as possible to maintain connectivity between populations and to avoid habitat degradation due to the colonization by nonnative, invasive plants.

Gonocalyx concolor

The primary threats to the PBFs that *Gonocalyx concolor* depends on include: (1) Habitat destruction and modification by development of telecommunication towers and associated facilities on the mountain top of Cerro La Santa; (2) vegetation management; (3) hurricanes and tropical storms; (4) landslides; (5) invasive species; and (6) human-induced fire. The majority of these threats can be addressed by special management considerations or protection while others (e.g., hurricanes, landslides, and climate change) are beyond the control of land owners and managers.

Management activities that could ameliorate these threats include, but are not limited to, implementation of conservation measures with DNER to reduce threats to the species in the Carite Commonwealth Forest; minimization of habitat disturbance, fragmentation, and destruction resulting from maintenance of telecommunication facilities; prevention of fires; and controlling invasive plant species.

The reduction of all these threats for *Agave eggersiana*, *Gonocalyx concolor*, and *Varronia rupicola* will require the implementation of special management actions within each of the critical habitat areas identified in this proposed rule. All proposed critical habitat requires active management to address the ongoing threats listed above and those presented in the

discussions of Factors A through E (see **Summary of Factors Affecting the Species** section of our proposed listing rule, which is published elsewhere in today's **Federal Register**).

Special management considerations or protection for the features essential to the conservation of the species within each critical habitat area will depend on the threats to the essential features in that critical habitat area. Accordingly, the description of each critical habitat unit below will include a discussion of the threats and the special management actions needed to address them.

Criteria Used To Identify Critical Habitat

As required by section 4(b)(2) of the Act, we use the best scientific data available to designate critical habitat. Sources of data for the three Caribbean species and their habitat include multiple databases maintained by universities and by State and Federal agencies from Puerto Rico and USVI, reports on assessments and surveys throughout the species' range, and assessments of current conditions of the three Caribbean species and their habitat at known locations (e.g., Monsegur and Vargas, Service, pers. obs. 2013; Dalmida-Smith, DPNR 2010, Moser *et al.* 2010). We review available information pertaining to the habitat requirements of the species. In accordance with the Act and its implementing regulations at 50 CFR 424.12(e), we consider whether designating additional areas outside those currently occupied, as well as those that are currently occupied (i.e., occupied at the time of listing) , is necessary to ensure the conservation of the species.

We are proposing to designate critical habitat in areas within the geographical area currently occupied by the three Caribbean plants (i.e., occupied at the time of proposed listing).

All of these units are proposed for designation based on sufficient elements of physical and biological features being present to support known life-history processes of the species. We have defined occupied critical habitat as areas where the three Caribbean plants are currently found and that have the PCEs mentioned above at the time of listing. We used information from site visits to the species' habitats conducted by Service biologists, herbarium specimens, personal communications with researchers, and reports prepared by agencies and researchers to identify the specific locations occupied by the three species. We plotted all occurrence records of the three Caribbean plants on maps in geographic information system as points and polygons. Then, we used U.S. Geological Survey (USGS) topographic maps, aerial photographs, and U.S. Forest Service (USFS)-International Institute of Tropical Forestry (IITF) land cover layers to delineate the critical habitat units. Critical habitat units were then mapped using ArcMap version 10 (Environmental Systems Research Institute, Inc.), a Geographic Information Systems (GIS) program.

We are also proposing to designate specific areas outside the geographical area occupied by *Agave eggersiana* at the time of listing (areas reported as historical) and *Varronia rupicola*, because the current amount of habitat that is occupied is not sufficient for the recovery of the species; hence, we have determined that such areas are essential for their conservation. The justification for why unoccupied habitat is essential to the conservation of these species, and the methodology used to identify the best unoccupied areas for consideration of inclusion, is set forth below.

Small populations and plant species with limited distributions, like those of *Agave eggersiana* and *Gonocalyx concolor*, are vulnerable to relatively minor environmental disturbances (Frankham 2005, pp. 135-136), and are subject to the loss of genetic diversity from

genetic drift (Ellstrand and Elam 1993, pp. 217–237; Leimu *et al.* 2006, pp. 942–952; Honnay and Jacquemyn, 2007, p. 824). Plant populations with lowered genetic diversity are more prone to local extinction (Barrett and Kohn 1991, pp. 4, 28). Smaller plant populations generally have lower genetic diversity, and lower genetic diversity may in turn lead to even smaller populations by decreasing the species' ability to adapt, thereby increasing the probability of population extinction (Newman and Pilson 1997, p. 360; Palstra and Ruzzante 2008, pp. 3428–3447). Because of the dangers associated with small populations or limited distributions, the recovery of many rare plant species includes the creation of new sites or reintroductions to ameliorate these effects. When proposing or designating critical habitat, we consider future recovery efforts and conservation of the species.

The habitat of these species must be conserved to fulfill their recovery. Furthermore, it is important to ensure there are enough individuals of the species to secure their survival into the future as well as to ensure the habitat (with all associated plant communities) is adequate for the species. At present, there are only approximately 300 known adult individuals of *Agave eggersiana*, 31 individuals of *Gonocalyx concolor*, 75 individuals of *Varronia rupicola*, and only few areas where the three species have been documented. Although at this moment we do not know how many individuals would suffice to safeguard these species, having limited populations in limited areas is detrimental to the species, and even more detrimental if threats are not ameliorated.

Determination of Critical Habitat Units

We are proposing four areas that are currently occupied and two areas that are currently unoccupied, but on which the species have been historically reported as critical habitat, for

Agave eggersiana; two occupied areas for *Gonocalyx concolor*; and five occupied areas and two unoccupied areas for *Varronia rupicola*. We believe the proposed areas are essential to ensure the protection of habitat over a wide geographic area and to help ensure that catastrophic events, such as hurricanes, fires, and diseases, will not affect all populations simultaneously.

Areas Occupied at the Time of Listing

The proposed critical habitat designation focuses on occupied areas throughout the range of the three Caribbean species that have the necessary PCEs to allow for the maintenance and expansion of existing populations.

Agave eggersiana

We identified seven populations of *Agave eggersiana* in St. Croix, five to the south and two to the north. Three of the five populations in the south are found in proximate locations, as explained further. One proximate location includes South Shore, Cane Garden, and Vagthus Point, which are all located along the same beach, and for the purpose of this document we will discuss these populations as one location (hereafter Cane Garden) allowing area for the expansion of the populations. Manchenil Bay, Great Pond, and Protestant Cay will be discussed as the other three locations. Gallows Bay is not proposed as critical habitat, even though it is occupied by the species, because the area lacks the identified PCEs. There is no habitat available for either the establishment of other individuals or the expansion of the species, because it is located within a condominium project. This existing population is of one individual hanging on

a cliff/hillside, and when it is time to reproduce, all the bulbils will fall to the road (asphalted road) and the bulbils will not be able to continue their growth. There is no suitable habitat in this area aside from where the plant is currently located.

Gonocalyx concolor

We identified two units that harbor the only three populations known of *Gonocalyx concolor*: two populations at Cerro La Santa and another population at Charco Azul, both in the Carite Commonwealth Forest. At Cerro La Santa, the species is found at elevations between 2,890 to 2,950 ft (880 to 900 m) from sea level, associated to remnants of elfin forest vegetation and to late successional vegetation. The species shows a limited distribution in its habitat, occupying only 0.75 ac (0.3 ha) at Cerro La Santa (Pacheco and Monsegur, USFWS, unpublished data, 2013) and approximately 0.12 ac (0.05 ha) at Charco Azul (O. Monsegur, unpublished data, 2006).

Varronia rupicola

We identified five natural areas currently occupied by *Varronia rupicola* (Montalva, Guánica Commonwealth Forest, Montes de Barina, Peñon de Ponce, and Puerto Ferro). The species has been consistently reported from these areas during the last decade, and all areas harbor remnants of native forest characterized by a high plant diversity and endemism. All of these areas harbor remnants of native shrubland/scrubland forest vegetation and semi-deciduous dry forest on limestone substrate, showing a unique forest structure that is not present elsewhere

in Puerto Rico and that represent the habitat that contains the features necessary for the conservation of the species.

Areas Outside of the Geographic Range at the Time of Listing

For us to propose for designation areas not occupied by the three Caribbean species at the time of listing, we must demonstrate that these areas are essential to the conservation of the species. We are proposing to designate critical habitat outside of the geographic range at the time of listing for *Agave eggersiana* and *Varronia rupicola*.

Agave eggersiana

The east end of St. Croix is within the historical range of *Agave eggersiana* (Britton and Wilson 1923, p. 156), but it is not within the geographic range currently occupied by the species. To determine if this area is essential for the conservation *Agave eggersiana*, we considered: (1) The importance of the site to the overall status of the species to prevent extinction and to contribute to future recovery of *A. eggersiana*; (2) whether the areas contain the PCEs and PBFs; (3) whether the area could be restored to contain the necessary habitat to support *A. eggersiana*; and (4) whether a population of the species could be reestablished in that unoccupied area.

The easternmost area of St. Croix encompasses conservation areas managed by the USVI Government and The Nature Conservancy. In this area, we are proposing to designate two units (East End North and East End South). These areas may allow for important population expansion of *Agave eggersiana*. Furthermore, this area of land is a secluded location that would

safeguard the species in the event of a catastrophic event such as a hurricane, or a threat such as a disease or pest (e.g., agave snout weevil (*Scyphophorus acupunctatus*)). These areas also contain all of the PCEs. Hence, we consider the areas as essential for the conservation of *A. eggersiana*.

Varronia rupicola

We propose the designation of two areas that are not currently occupied by the species. These two areas are known as Punta Negra and Cerro Playuela on the Island of Vieques and lie adjacent to an area currently occupied by the species (Puerto Ferro), forming a continuous habitat that provides an ecological niche for the species. They contain the dry coastal shrubland habitat PCEs and PBFs, including substrates, and associated native plants and forest structure. We consider these three contiguous peninsulas (Punta Negra, Cerro Playuela, and Puerto Ferro) as a single ecological unit, which are separated by two narrow water channels. The channels are not representative of a barrier for dispersion or expansion of the species. Furthermore, these forested areas provide shelter for potential pollinators and dispersers of *Varronia rupicola*. This kind of habitat does not occur elsewhere in Vieques, as most of the Island was deforested for agricultural practices, and further degraded by military practices. Therefore, Punta Negra and Cerro Playuela provide suitable habitat conditions for natural recruitment of *V. rupicola* and for the expansion of its populations. It is very likely that *V. rupicola* also occurs within Punta Negra and Cerro Playuela, and that ecological interactions and genetic flow between these areas and Puerto Ferro is occurring. The loss of this forest fragments may compromise the conservation of the genetic stock represented in that population. Hence, we consider Punta Negra and Cerro

Playuela to be essential for the conservation of the genetic diversity of the species.

For *Agave eggersiana* and *Varronia rupicola*, the current amount of habitat that is occupied is not sufficient for the recovery of the species; therefore, we determined it essential to include additional unoccupied habitat units in this proposed critical habitat designation.

When determining proposed critical habitat boundaries, we made every effort to avoid including developed areas such as buildings and pavement, and other structures because such lands lack the physical or biological features for the three Caribbean species. The scale of the maps we prepared under the parameters for publication within the Code of Federal Regulations may not reflect the exclusion of such developed lands. Any such lands inadvertently left inside critical habitat boundaries shown on the maps of this proposed rule have been excluded by text in the proposed rule and are not proposed for designation as critical habitat. Therefore, if the critical habitat is finalized as proposed, a Federal action involving these lands would not trigger section 7 consultation with respect to critical habitat and the requirement of no adverse modification unless the specific action would affect the physical or biological features in the adjacent critical habitat.

The critical habitat designation is defined by the map or maps, as modified by any accompanying regulatory text, presented at the end of this document in the rule portion. We include more detailed information on the boundaries of the critical habitat designation in the preamble of this document. We will make the coordinates or plot points or both on which each map is based available to the public on <http://www.regulations.gov> at Docket No. FWS-R4-ES-2013-0040, on our Internet site at <http://www.fws.gov/caribbean/es>, and at the field office responsible for the designation (see **FOR FURTHER INFORMATION CONTACT**, above).

Proposed Critical Habitat Designation

Agave eggersiana

We are proposing to designate 50.6 ac (20.5 ha) in six units as critical habitat for *Agave eggersiana*. The critical habitat units described below constitute our best current assessment of areas that meet the definition of critical habitat for this species. The six units we propose as critical habitat are: (1) Cane Garden, (2) Manchenil, (3) Great Pond, (4) Protestant Cay, (5) East End South, and (6) East End North. Table 1 shows the proposed critical habitat units, land ownership, and approximate extent of the proposed critical habitat for *A. eggersiana*.

Table 1. *Agave eggersiana* proposed critical habitat units.

Unit	Occupied at Time of Listing?	Land Ownership	Hectares	Acres
1. Cane Garden	Yes	Private	2.8	6.9
2. Manchenil	Yes	Private	0.61	1.5
3. Great Pond	Yes	Government	0.32	0.8
4. Protestant Cay	Yes	Government, but leased to private	0.16	0.4
5. East End South	No	Private	7.7	19
6. East End North	No	Government	8.9	22
Total			20.5	50.6

Note: Area sizes may not sum due to rounding.

Below, we present brief descriptions of all units and reasons why these units meet the definition of critical habitat for *Agave eggersiana*.

Unit 1: Cane Garden

Unit 1 consists of 6.9 ac (2.8 ha) of privately owned lands located at Estate Cane Garden and Estate Peters Mindle, Christiansted, St. Croix, USVI. This unit is located in the south-central portion of the island, approximately 0.17 mi (0.27 km) south of Road 62 and approximately 0.2 mi (0.3 km) northeast of Vagthus Point, along the northeast coast of Canegarden Bay and south of a private trail. It is within the geographical area occupied at the time of listing. This unit contains all the PCEs. The PCEs in this unit may require special considerations to address threats of nonnative plant species, effects of hurricanes (i.e., storm surge and erosion), and habitat modification (e.g., trails expansion).

Unit 2: Manchenil

Unit 2 consists of 1.5 ac (0.61 ha) of privately owned lands located at Estate Granard, Christiansted, St. Croix, USVI. This unit is located in the south-central portion of the island, approximately 0.50 mi (0.82 km) south of Road 62 and approximately 0.02 mi (0.03 km) east of South Shore Road, along the northeast coast of Manchenil Bay. It is within the geographical area occupied at the time of listing. This unit contains all the PCEs. The PCEs in this unit may require special considerations to address threats of fires, nonnative plant species, effects of hurricanes (i.e., storm surge), and habitat modification.

Unit 3: Great Pond

Unit 3 consists of 0.8 ac (0.32 ha) of government-owned land located at Estate Great Pond, Christiansted, St. Croix, USVI. This unit is located in the south of the island, approximately 6.5 ft (2 m) south of Road 62 and east of the entrance of East End Marine Park offices. It is within the geographical area occupied at the time of listing. This unit contains all the PCEs. The PCEs in this unit may require special considerations to address threats of fire, nonnative plant species, and habitat modification (i.e., landscaping).

Unit 4: Protestant Cay

Unit 4 consists of 0.4 ac (0.16 ha) of government-owned lands that are leased to a private party and are located at Protestant Cay, St. Croix, USVI. The Cay is located approximately 0.33 km (0.20 mi) north of Christiansted town. The unit is located on the northeast side of the Cay. It is within the geographical area occupied at the time of listing. This unit contains all the PCEs. The PCEs in this unit may require special considerations to address threats of nonnative plant species, effects of hurricanes (i.e., storm surge and erosion), and habitat modification (i.e., hotel landscaping and maintenance).

The Protestant Cay unit is also currently designated as critical habitat for the St. Croix ground lizard (*Ameiva polops*) (42 FR 47840, September 22, 1977).

Unit 5: East End South

Unit 5 consists of 19 ac (7.7 ha) of located at Estate Jack's Bay and Estate Isaac's Bay, Christiansted, St. Croix, USVI. This unit is located south of the eastern end portion of the island,

approximately 0.93 mi (1.5 km) southwest of Point Udall, approximately 0.02 mi (0.04 km) east of Point Road, along the north coast of Jack's Bay, and south of a Jack's and Issac's Bay Preserve trail. It is owned by The Nature Conservancy and managed as conservation land. This unit is not occupied at the time of listing. However, it is part of the historical range of the species. This unit is essential for the conservation of the species because it contains the PCEs and because its designation would safeguard other established populations in case of any stochastic event that occurs within habitats currently occupied by the species.

Unit 6: East End North

Unit 6 consists of 22 ac (8.9 ha) of government-owned land located at Estate Cotton Garden, Christiansted, St. Croix, USVI. This unit is located north of the eastern end portion of the island, approximately 0.86 mi (1.4 km) northwest of Point Udall, north of Road 82 along the eastern coast of Cotton Garden Bay and western coast of Boiler Bay. This unit is not occupied at the time of listing. However, it is part of the historical range of the species. This unit is essential for the conservation of the species because it contains the PCEs and because its designation would safeguard other established populations in case of any stochastic event that occurs within habitats currently occupied by the species.

Gonocalyx concolor

We are proposing to designate approximately 198 ac (80.1 ha) in two units as critical habitat for the *Gonocalyx concolor*. The critical habitat units described below constitute our best

current assessment of areas that meet the definition of critical habitat for this species. The two units we propose as critical habitat are: (1) Cerro La Santa; and (2) Charco Azul. Both units fall within the Carite Commonwealth Forest, land owned by the Commonwealth of Puerto Rico and managed for conservation by the Puerto Rico DNER. Table 2 shows the proposed critical habitat units, land ownership, and approximate extent of the proposed critical habitat for *G. concolor*.

Table 2. *Gonocalyx concolor* proposed critical habitat units.

Unit	Occupied at Time of Listing?	Land Ownership	Hectares	Acres
1. Cerro La Santa	Yes	Commonwealth of Puerto Rico	7.6	18.8
2. Charco Azul	Yes	Commonwealth of Puerto Rico	72.5	179.2
Total			80.1	198

Note: Area sizes may not sum due to rounding.

Below, we present brief descriptions of all units and reasons why these units meet the definition of critical habitat for *Gonocalyx concolor*.

Unit 1: Cerro La Santa

Unit 1 consists of 18.8 ac (7.6 ha) of elfin forest located on exposed peaks and ridges of Cerro La Santa, above 2,890 ft (880 m) in elevation from sea level. This unit is located in the Sierra de Cayey on Road PR 184, Km 27.1 in Espino Ward, between the Municipalities of Cayey and San Lorenzo. This unit is within the geographical area occupied by the species at the time of listing. This unit contains all PCEs. The PCEs in this unit may require special considerations to address threats of habitat modification resulting from maintenance and potential expansion of

existing telecommunication facilities, human-induced fires, invasive species, and degradation of forest quality.

Unit 2: Charco Azul

Unit 2 consists of 179.2 ac (72.5 ha) of ausubo forest located along the Rio Grande de Patillas River basin between 2,030 ft (620 m) and 2,330 ft (720 m) in elevation from sea level. This unit is approximately 2.0 mi (3.2 km) southeast of Unit 1. This unit is within the geographical area occupied by the species at the time of listing. This unit contains all PCEs. The PCEs in this unit may require special considerations and protection to address threats of habitat modification resulting from human-induced fires, invasive species, and degradation of forest quality.

Varronia rupicola

We are proposing to designate 6,547 ac (2,648 ha) in seven units as critical habitat for *Varronia rupicola*. The critical habitats described below constitute our best current assessment of areas that meet the definition of critical habitat for this species. The seven units are: (1) Montalva, (2) Guánica Commonwealth Forest, (3) Montes de Barina, (4) Peñon de Ponce, (5) Punta Negra, (6) Puerto Ferro, and (7) Cerro Playuela. Table 3 shows the proposed critical habitat units, land ownership, and approximate extent of the proposed critical habitat for *V. rupicola*.

Table 3. *Varronia rupicola* proposed critical habitat units.

Unit	Occupied at Time of Listing?	Land Ownership	Hectares	Acres
1. Montalva	Yes	Commonwealth of Puerto Rico	401	992
2. Guánica Commonwealth Forest	Yes	Commonwealth of Puerto Rico	236	584
3. Montes de Barina	Yes	Private	810	2,002
4. Peñon de Ponce	Yes	Private	880	2,174
5. Punta Negra	No	Commonwealth of Puerto Rico	117	291
6. Puerto Ferro	Yes	Federal Government (FWS)	154	381
7. Cerro Playuela	No	Federal Government (FWS)	50	123
Total			2,648	6,547

Note: Area sizes may not sum due to rounding.

Below, we present brief descriptions of all units and reasons why these units meet the definition of critical habitat for *Varronia rupicola*.

Unit 1: Montalva

Unit 1 consists of 992 ac (401 ha) of Commonwealth-owned lands located at Montalva Ward in the Municipality of Guánica, Puerto Rico. This unit is located just south of State Highway PR 324 and the Town of Guánica, and includes Cerro Montalva. It is within the geographical area occupied by the species at the time of listing. Due to the marginal agricultural value, these forests were minimally impacted by other land use practices (e.g., charcoal production and ranching). Therefore, the prime and essential habitat for the species has maintained its unique features, such as the dry coastal shrubland habitat's PCEs and PBFs,

including suitable climate, substrates, and associated native plants and forest structure. Despite its conservation status the habitat has been affected by human-induced fires and maintenance of access roads and rights-of-way. The PCEs in this unit may require special considerations to address threats of nonnative plant species, human-induced fires, hurricanes, and habitat modification (e.g., urban development).

Unit 2: Guánica Commonwealth Forest

Unit 2 consists of 584 ac (236 ha) of Commonwealth-owned lands located within Carenero, Barina, and Boca Wards in the municipalities of Guánica, Yauco, and Guayanilla, Puerto Rico. This unit is located within the core of the east section of the Guánica Commonwealth Forest. The forested habitat in this unit was minimally impacted by other land use practices like charcoal production and ranching due to its marginal agricultural value; hence, it has maintained its unique features. It is within the geographical area occupied by the species at the time of listing and contains the dry coastal shrubland habitat's PCEs and PBFs, including suitable climate, substrates, and associated native plants and forest structure. Despite its conservation status, the habitat has been affected by human-induced fires and maintenance of access roads and rights-of-way. The PCEs in this unit may require special considerations to address threats of nonnative plant species, human-induced fires, hurricanes, and habitat modification (e.g., urban development and right-of-way maintenance).

Unit 3: Montes de Barina

Unit 3 consists of 2,002 ac (810 ha) of privately owned lands primarily located along Indios Ward in the municipality of Guayanilla. A small section of this unit falls within the Cambalache Ward in Yauco, Puerto Rico. This unit is located just south of State Highway PR 2. The forested habitat in this unit was minimally impacted by other land use practices like charcoal production and ranching due to its marginal agricultural value; hence, it has maintained its unique features. The unit is within the geographical area occupied by the species at the time of listing and contains the dry coastal shrubland habitat's PCEs and PBFs, including suitable climate, substrates, and associated native plants and forest structure. The PCEs in this unit may require special considerations to address threats of nonnative plant species, human-induced fires, hurricanes, and habitat modification (e.g., urban development).

Unit 4: Peñon de Ponce

Unit 4 consists of 2,174 ac (880 ha) of privately owned lands located along Encarnación and Canas Wards in the municipalities of Peñuelas and Ponce, Puerto Rico. This unit is located just north of State Highway PR 2 in the area known as Punta Cucharas. The forested habitat in this unit was minimally impacted by other land use practices like charcoal production and ranching due to its marginal agricultural value; hence, it has maintained its unique features. It is within the geographical area occupied by the species at the time of listing and contains the dry coastal shrubland habitat's PCEs and PBFs, including suitable climate, substrates, and associated native plants and forest structure. The PCEs in this unit may require special considerations to address threats of nonnative plant species, human-induced fires, hurricanes, and habitat modification (e.g., urban development).

Unit 5: Punta Negra

Unit 5 is a small peninsula that consists of 291 ac (117 ha) of Commonwealth-owned lands located within Puerto Ferro Ward on the island of Vieques, Puerto Rico. This unit is located about 1.5 mi (2.5 km) east of the town of Esperanza and west of Puerto Ferro, Vieques National Wildlife Refuge (NWR). This natural area is managed by the Puerto Rico DNER as part of the Puerto Mosquito Natural Reserve. The forested habitat in this unit was minimally impacted by other land use practices like charcoal production and ranching due to its marginal agricultural value; hence, it has maintained its unique features. It is adjacent to an area currently occupied by the species (Unit 6), forming a continuous habitat and contains the dry coastal shrubland habitat's PCEs and PBFs, including suitable climate, substrates, and associated native plants and forest structure. However, there is no specific record of the species within this unit. We consider Units 5, 6, and 7 to be a single ecological unit. The species is expected to occur within this area and ecological interactions and genetic flow between this area and Unit 6 may be essential for the recovery of the species. It was not included as a single unit with Units 6 and 7 because these peninsulas are united by a narrow mangrove forest that does not provide habitat for the species. The PCEs in this unit may require special considerations to address threats of nonnative plant species, human-induced fires, and hurricanes.

Unit 6: Puerto Ferro

Unit 6 is a small peninsula that consists of 381 ac (154 ha) of federally owned lands managed by the Service as the Vieques NWR, and is located within the Puerto Ferro Ward on the

island of Vieques, Puerto Rico. This unit is located about 4 km (2.5 mi) east of the town of Esperanza. It is located just between Unit 5 and Unit 7, forming a continuous habitat and contains the dry coastal shrubland habitat's PCEs and PBFs, and therefore we consider Units 5, 6, and 7 to be a single ecological unit. The forested habitat in this unit was minimally impacted by other land use practices like charcoal production and ranching due to its marginal agricultural value; hence, it has maintained its unique features. It is within the geographical area occupied by the species at the time of listing and contains the dry coastal shrubland's habitat PCEs and PBFs, including suitable climate, substrates, and associated native plants and forest structure. The species occurs within this area and ecological interactions and genetic flow between this area and the adjacent habitat (Unit 5 and Unit 7) may be essential for the recovery of the species. It was not included as a single unit with Units 5 and 7 because these peninsulas are united by a narrow mangrove forest that does not provide habitat for the species. The PCEs in this unit may require special considerations to address threats of nonnative plant species, human-induced fires, and hurricanes.

Unit 7: Cerro Playuela

Unit 7 is a small peninsula that consists of 123 ac (50 ha) of federally owned lands managed by the Service as the Vieques NWR, and is located within Puerto Ferro Ward on the island of Vieques, Puerto Rico. This unit is located about 0.5 km (0.31 mi) south of the former airport of Campamento García (Vieques NWR). The forested habitat in this unit was minimally impacted by other land use practices like charcoal production and ranching due to its marginal agricultural value; hence, it has maintained its unique features. It is adjacent to an area currently

occupied by the species (Unit 6), forming a continuous habitat, and contains the dry coastal shrubland habitat's PCEs and PBFs, including suitable climate, substrates, and associated native plants and forest structure. However, there is no specific record of the species within this unit. We consider Units 5, 6, and 7 to be a single ecological unit. The species is expected to occur within this area and ecological interactions and genetic flow between this area and Unit 6 may be essential for the recovery of the species. It was not included as a single unit with Units 5 and 6 because these peninsulas are united by a narrow mangrove forest that does not provide habitat for the species. The PCEs in this unit may require special considerations to address threats of nonnative plant species, human-induced fires, and hurricanes.

Effects of Critical Habitat Designation

Section 7 Consultation

Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that any action they fund, authorize, or carry out is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat of such species. In addition, section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any agency action which is likely to jeopardize the continued existence of any species proposed to be listed under the Act or result in the destruction or adverse modification of proposed critical habitat.

Decisions by the 5th and 9th Circuit Courts of Appeals have invalidated our regulatory definition of "destruction or adverse modification" (50 CFR 402.02) (see *Gifford Pinchot Task*

Force v. U.S. Fish and Wildlife Service, 378 F. 3d 1059 (9th Cir. 2004) and *Sierra Club v. U.S. Fish and Wildlife Service et al.*, 245 F.3d 434 (5th Cir. 2001)), and we do not rely on this regulatory definition when analyzing whether an action is likely to destroy or adversely modify critical habitat. Under the provisions of the Act, we determine destruction or adverse modification on the basis of whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species.

If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency (action agency) must enter into consultation with us. Examples of actions that are subject to the section 7 consultation process are actions on State, tribal, local, or private lands that require a Federal permit (such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act (33 U.S.C. 1251 *et seq.*) or a permit from the Service under section 10 of the Act) or that involve some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency Management Agency). Federal actions not affecting listed species or critical habitat, and actions on State, tribal, local, or private lands that are not federally funded or authorized, do not require section 7 consultation.

As a result of section 7 consultation, we document compliance with the requirements of section 7(a)(2) through our issuance of:

- (1) A concurrence letter for Federal actions that may affect, but are not likely to adversely affect, listed species or critical habitat; or
- (2) A biological opinion for Federal actions that may affect and are likely to adversely affect listed species or critical habitat.

When we issue a biological opinion concluding that a project is likely to jeopardize the

continued existence of a listed species and/or destroy or adversely modify critical habitat, we provide reasonable and prudent alternatives to the project, if any are identifiable, that would avoid the likelihood of jeopardy and/or destruction or adverse modification of critical habitat. We define “reasonable and prudent alternatives” (at 50 CFR 402.02) as alternative actions identified during consultation that:

- (1) Can be implemented in a manner consistent with the intended purpose of the action,
- (2) Can be implemented consistent with the scope of the Federal agency’s legal authority and jurisdiction,
- (3) Are economically and technologically feasible, and
- (4) Would, in the Director’s opinion, avoid the likelihood of jeopardizing the continued existence of the listed species and/or avoid the likelihood of destroying or adversely modifying critical habitat.

Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project. Costs associated with implementing a reasonable and prudent alternative are similarly variable.

Regulations at 50 CFR 402.16 require Federal agencies to reinitiate consultation on previously reviewed actions in instances where we have listed a new species or subsequently designated critical habitat that may be affected and the Federal agency has retained discretionary involvement or control over the action (or the agency’s discretionary involvement or control is authorized by law). Consequently, Federal agencies sometimes may need to request reinitiation of consultation with us on actions for which formal consultation has been completed, if those actions with discretionary involvement or control may affect subsequently listed species or designated critical habitat.

Application of the “Adverse Modification” Standard

The key factor related to the adverse modification determination is whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species. Activities that may destroy or adversely modify critical habitat are those that alter the physical or biological features to an extent that appreciably reduces the conservation value of critical habitat for *Agave eggersiana*, *Gonocalyx concolor*, and *Varronia rupicola*. As discussed above, the role of critical habitat is to support life-history needs of the species and provide for the conservation of the species.

Section 4(b)(8) of the Act requires us to briefly evaluate and describe, in any proposed or final regulation that designates critical habitat, activities involving a Federal action that may destroy or adversely modify such habitat, or that may be affected by such designation.

Activities that may affect critical habitat, when carried out, funded, or authorized by a Federal agency, should result in consultation for *Agave eggersiana*, *Gonocalyx concolor*, and *Varronia rupicola*. These activities include, but are not limited to:

(1) Actions that would appreciably degrade or destroy the physical or biological features for the species. Such activities could include, but are not limited to, clearing or cutting native live trees and shrubs (e.g., bulldozing, vegetation pruning, construction, road building, maintenance of rights-of-way for powerlines, and herbicide application). These activities could pose a risk of take by fire to the survival of *Agave eggersiana*, *Gonocalyx concolor*, and *Varronia rupicola*.

(2) Actions that would introduce or encourage the spread of nonnative plant species that

would significantly alter vegetation structure. Such activities may include, but are not limited to, residential and commercial development and road construction. These activities can affect the growth, reproduction, and survival of *Agave eggersiana*, *Gonocalyx concolor*, and *Varronia rupicola*.

(3) Actions that would significantly alter the structure and function of the elfin forest or the ausubo forest within the Carite Commonwealth Forest. Removal of vegetation could alter or eliminate the microclimate (e.g., change in temperature and humidity levels) and may allow invasion of competitor species and thereby negatively affect the habitat necessary for all life stages of the *Gonocalyx concolor*.

Exemptions

Application of Section 4(a)(3) of the Act

The Sikes Act Improvement Act of 1997 (Sikes Act) (16 U.S.C. 670a) required each military installation that includes land and water suitable for the conservation and management of natural resources to complete an integrated natural resources management plan (INRMP) by November 17, 2001. An INRMP integrates implementation of the military mission of the installation with stewardship of the natural resources found on the base. Each INRMP includes:

- (1) An assessment of the ecological needs on the installation, including the need to provide for the conservation of listed species;
- (2) A statement of goals and priorities;
- (3) A detailed description of management actions to be implemented to provide for these

ecological needs; and

(4) A monitoring and adaptive management plan.

Among other things, each INRMP must, to the extent appropriate and applicable, provide for fish and wildlife management; fish and wildlife habitat enhancement or modification; wetland protection, enhancement, and restoration where necessary to support fish and wildlife; and enforcement of applicable natural resource laws.

The National Defense Authorization Act for Fiscal Year 2004 (Pub. L. 108-136) amended the Act to limit areas eligible for designation as critical habitat. Specifically, section 4(a)(3)(B)(i) of the Act (16 U.S.C. 1533(a)(3)(B)(i)) now provides: “The Secretary shall not designate as critical habitat any lands or other geographic areas owned or controlled by the Department of Defense, or designated for its use, that are subject to an integrated natural resources management plan prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation.”

There are no Department of Defense lands within the proposed critical habitat designation for *Agave eggersiana*, *Gonocalyx concolor*, or *Varronia rupicola*.

Exclusions

Application of Section 4(b)(2) of the Act

Section 4(b)(2) of the Act states that the Secretary shall designate and make revisions to critical habitat on the basis of the best available scientific data after taking into consideration the

economic impact, national security impact, and any other relevant impact of specifying any particular area as critical habitat. The Secretary may exclude an area from critical habitat if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless he determines, based on the best scientific data available, that the failure to designate such area as critical habitat will result in the extinction of the species. In making that determination, the statute on its face, as well as the legislative history, are clear that the Secretary has broad discretion regarding which factor(s) to use and how much weight to give to any factor.

Under section 4(b)(2) of the Act, we may exclude an area from designated critical habitat based on economic impacts, impacts on national security, or any other relevant impacts. In considering whether to exclude a particular area from the designation, we identify the benefits of including the area in the designation, identify the benefits of excluding the area from the designation, and evaluate whether the benefits of exclusion outweigh the benefits of inclusion. If the analysis indicates that the benefits of exclusion outweigh the benefits of inclusion, the Secretary may exercise her discretion to exclude the area only if such exclusion would not result in the extinction of the species.

Economic Impacts

Under section 4(b)(2) of the Act, we consider the economic impacts of specifying any particular area as critical habitat. In order to consider economic impacts, we are preparing an analysis of the economic impacts of the proposed critical habitat designation and related factors.

We will announce the availability of the draft economic analysis as soon as it is

completed, at which time we will seek public review and comment. At that time, copies of the draft economic analysis will be available for downloading from the Internet at the Federal eRulemaking Portal at [http:// www.regulations.gov](http://www.regulations.gov) under Docket No. FWS–R4–ES–2013–0040, or by contacting the Caribbean Ecological Services Field Office directly (see **FOR FURTHER INFORMATION CONTACT**). During the development of a final designation, we will consider economic impacts based on information in our economic analysis, public comments, and other new information, and areas may be excluded from the final critical habitat designation under section 4(b)(2) of the Act and our implementing regulations at 50 CFR 424.19.

National Security Impacts

Under section 4(b)(2) of the Act, we consider whether there are lands where a national security impact might exist. As discussed above, we have determined that the lands within the proposed designation of critical habitat for *Agave eggersiana*, *Gonocalyx concolor*, and *Varronia rupicola* are not owned or managed by the Department of Defense, and, therefore, we anticipate no impact on national security. Consequently, the Secretary is not intending to exercise her discretion to exclude any areas from the final designation based on impacts on national security.

Other Relevant Impacts

Under section 4(b)(2) of the Act, we consider any other relevant impacts, in addition to economic impacts and impacts on national security. We consider a number of factors, including whether the landowners have developed any HCPs or other management plans for the area, or

whether there are conservation partnerships that would be encouraged by designation of, or exclusion from, critical habitat. In addition, we look at any tribal issues, and consider the government-to-government relationship of the United States with tribal entities. We also consider any social impacts that might occur because of the designation.

In preparing this proposal, we have determined that there are currently no HCPs or other management plans for *Agave eggersiana*, *Gonocalyx concolor*, or *Varronia rupicola*. The proposed designation does not include any tribal lands or trust resources. We anticipate no impact on tribal lands, partnerships, or HCPs from this proposed critical habitat designation. Accordingly, the Secretary does not intend to exercise his discretion to exclude any areas from the final designation based on other relevant impacts.

Peer Review

In accordance with our joint policy on peer review published in the **Federal Register** on July 1, 1994 (59 FR 34270), we will seek the expert opinions of at least three appropriate and independent specialists regarding this proposed rule. The purpose of peer review is to ensure that our critical habitat designations are based on scientifically sound data, assumptions, and analyses. We have invited these peer reviewers to comment during this public comment period.

We will consider all comments and information we receive during this comment period on this proposed rule during our preparation of a final determination. Accordingly, the final determination may differ from this proposal.

Public Hearings

Section 4(b)(5) of the Act provides for one or more public hearings on this proposal, if requested. Requests must be received within 45 days after the date of publication of this proposed rule in the **Federal Register**. Such requests must be sent to the address shown in the **FOR FURTHER INFORMATION CONTACT** section. We will schedule public hearings on this proposal, if any are requested, and announce the dates, times, and places of those hearings, as well as how to obtain reasonable accommodations, in the **Federal Register** and local newspapers at least 15 days before the hearing.

Required Determinations

Regulatory Planning and Review—Executive Orders 12866 and 13563

Executive Order 12866 provides that the Office of Information and Regulatory Affairs will review all significant rules. The Office of Information and Regulatory Affairs has determined that this rule is not significant.

Executive Order 13563 reaffirms the principles of Executive Order 12866 while calling for improvements in the nation's regulatory system to promote predictability, to reduce uncertainty, and to use the best, most innovative, and least burdensome tools for achieving regulatory ends. The executive order directs agencies to consider regulatory approaches that reduce burdens and maintain flexibility and freedom of choice for the public where these approaches are relevant, feasible, and consistent with regulatory objectives. Executive Order 13563 emphasizes further that regulations must be based on the best available science and that

the rulemaking process must allow for public participation and an open exchange of ideas. We have developed this rule in a manner consistent with these requirements.

Regulatory Flexibility Act (5 U.S.C. 601 et seq.)

Under the Regulatory Flexibility Act (RFA; 5 U.S.C. 601 *et seq.*) as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996 (5 U.S.C 801 *et seq.*), whenever an agency must publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effects of the rule on small entities (small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of the agency certifies the rule will not have a significant economic impact on a substantial number of small entities. The SBREFA amended the RFA to require Federal agencies to provide a certification statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities.

According to the Small Business Administration, small entities include small organizations such as independent nonprofit organizations; small governmental jurisdictions, including school boards and city and town governments that serve fewer than 50,000 residents; and small businesses (13 CFR 121.201). Small businesses include such businesses as manufacturing and mining concerns with fewer than 500 employees, wholesale trade entities with fewer than 100 employees, retail and service businesses with less than \$5 million in annual sales, general and heavy construction businesses with less than \$27.5 million in annual business, special trade contractors doing less than \$11.5 million in annual business, and forestry and

logging operations with fewer than 500 employees and annual business less than \$7 million. To determine whether small entities may be affected, we will consider the types of activities that might trigger regulatory impacts under this designation as well as types of project modifications that may result. In general, the term “significant economic impact” is meant to apply to a typical small business firm’s business operations.

Importantly, the incremental impacts of a rule must be *both* significant and substantial to prevent certification of the rule under the RFA and to require the preparation of an initial regulatory flexibility analysis. If a substantial number of small entities are affected by the proposed critical habitat designation, but the per-entity economic impact is not significant, the Service may certify. Likewise, if the per-entity economic impact is likely to be significant, but the number of affected entities is not substantial, the Service may also certify.

Under the RFA, as amended, and following recent court decisions, Federal agencies are only required to evaluate the potential incremental impacts of rulemaking on those entities directly regulated by the rulemaking itself, and not the potential impacts to indirectly affected entities. The regulatory mechanism through which critical habitat protections are realized is section 7 of the Act, which requires Federal agencies, in consultation with the Service, to ensure that any action authorized, funded, or carried by the agency is not likely to adversely modify critical habitat. Therefore, only Federal action agencies are directly subject to the specific regulatory requirement (avoiding destruction and adverse modification) imposed by critical habitat designation. Under these circumstances, it is our position that only Federal action agencies would be directly regulated by this designation. Therefore, because Federal agencies are not small entities, the Service certifies that the proposed critical habitat rule will not have a significant economic impact on a substantial number of small entities.

In conclusion, based on our interpretation of directly regulated entities under the RFA and relevant case law, this designation of critical habitat will only directly regulate Federal agencies, which are not by definition small business entities. As such, we certify that, if promulgated, this designation of critical habitat will not have a significant economic impact on a substantial number of small business entities. Therefore, an initial regulatory flexibility analysis is not required.

Energy Supply, Distribution, or Use—Executive Order 13211

Executive Order 13211 (Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use) requires agencies to prepare Statements of Energy Effects when undertaking certain actions. Within one of the units, vegetation maintenance will occur along the edges of an existing road that remains accessible for power line maintenance. We do not anticipate any effects to critical habitat from this activity. Therefore, we do not expect the designation of this proposed critical habitat to significantly affect energy supplies, distribution, or use. Thus, this action is not a significant energy action, and no Statement of Energy Effects is required. However, we will further evaluate this issue as we conduct our economic analysis, and review and revise this assessment as warranted.

Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.)

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 *et seq.*), we make the following findings:

(1) This proposed rule would not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute, or regulation that would impose an enforceable duty upon State, local, or tribal governments, or the private sector, and includes both “Federal intergovernmental mandates” and “Federal private sector mandates.” These terms are defined in 2 U.S.C. 658(5)-(7). “Federal intergovernmental mandate” includes a regulation that “would impose an enforceable duty upon State, local, or tribal governments” with two exceptions. It excludes “a condition of Federal assistance.” It also excludes “a duty arising from participation in a voluntary Federal program,” unless the regulation “relates to a then-existing Federal program under which \$500,000,000 or more is provided annually to State, local, and tribal governments under entitlement authority,” if the provision would “increase the stringency of conditions of assistance” or “place caps upon, or otherwise decrease, the Federal Government’s responsibility to provide funding,” and the State, local, or tribal governments “lack authority” to adjust accordingly. At the time of enactment, these entitlement programs were: Medicaid; Aid to Families with Dependent Children work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement. “Federal private sector mandate” includes a regulation that “would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance or (ii) a duty arising from participation in a voluntary Federal program.”

The designation of critical habitat does not impose a legally binding duty on non-Federal Government entities or private parties. Under the Act, the only regulatory effect is that Federal agencies must ensure that their actions do not destroy or adversely modify critical habitat under section 7. While non-Federal entities that receive Federal funding, assistance, or permits, or that

otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency. Furthermore, to the extent that non-Federal entities are indirectly impacted because they receive Federal assistance or participate in a voluntary Federal aid program, the Unfunded Mandates Reform Act would not apply, nor would critical habitat shift the costs of the large entitlement programs listed above onto State governments.

(2) We lack the available economic information to determine if a Small Government Agency Plan is required. Therefore, we defer this finding until completion of the draft economic analysis is prepared under section 4(b)(2) of the Act.

Takings—Executive Order 12630

In accordance with Executive Order 12630 (Government Actions and Interference with Constitutionally Protected Private Property Rights), we will analyze the potential takings implications of designating critical habitat for *Agave eggersiana*, *Gonocalyx concolor*, and *Varronia rupicola* in a takings implications assessment. The draft economic analysis will provide the foundation for us to use in preparing a takings implication assessment. Critical habitat designation does not affect landowner actions that do not require Federal funding or permits, nor does it preclude development of habitat conservation programs or issuance of incidental take permits to permit actions that do require Federal funding or permits to go forward.

Federalism—Executive Order 13132

In accordance with Executive Order 13132 (Federalism), this proposed rule does not have significant Federalism effects. A federalism impact summary statement is not required. In keeping with Department of the Interior and Department of Commerce policy, we requested information from, and coordinated development of, this proposed critical habitat designation with appropriate State resource agencies in St. Croix, USVI, and Puerto Rico. The designation of critical habitat in areas currently occupied by the *Agave eggersiana*, *Gonocalyx concolor*, and *Varronia rupicola* imposes no additional restrictions to those currently in place and, therefore, has little incremental impact on State and local governments and their activities. The designation may have some benefit to these governments because the areas that contain the physical or biological features essential to the conservation of the species are more clearly defined, and the elements of the features of the habitat necessary to the conservation of the species are specifically identified. This information does not alter where and what federally sponsored activities may occur. However, it may assist local governments in long-range planning (rather than having them wait for case-by-case section 7 consultations to occur).

Where State and local governments require approval or authorization from a Federal agency for actions that may affect critical habitat, consultation under section 7(a)(2) would be required. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency.

In accordance with Executive Order 12988 (Civil Justice Reform), the Office of the Solicitor has determined that this rule does not unduly burden the judicial system and that it meets the requirements of sections 3(a) and 3(b)(2) of the Order. We are proposing to designate critical habitat in accordance with the provisions of the Act. To assist the public in understanding the habitat needs of the species, the rule identifies the elements of physical or biological features essential to the conservation of the species. The areas of proposed critical habitat are presented on maps, and the rule provides several options for the interested public to obtain more detailed location information, if desired.

Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)

This rule does not contain any new collections of information that require approval by OMB under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). This rule will not impose recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

National Environmental Policy Act (42 U.S.C. 4321 et seq.)

It is our position that, outside the jurisdiction of the U.S. Court of Appeals for the Tenth Circuit, we do not need to prepare environmental analyses pursuant to the National

Environmental Policy Act in connection with designating critical habitat under the Endangered Species Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244). This position was upheld by the U.S. Court of Appeals for the Ninth Circuit (*Douglas County v. Babbitt*, 48 F.3d 1495 (9th Cir. 1995), cert. denied 516 U.S. 1042 (1996)).

Government-to-Government Relationship with Tribes

In accordance with the President's memorandum of April 29, 1994 (Government-to-Government Relations with Native American Tribal Governments; 59 FR 22951), Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with tribes in developing programs for healthy ecosystems, to acknowledge that tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to tribes.

As discussed above, there are no tribal lands in Puerto Rico or St. Croix, USVI.

Clarity of the Rule

We are required by Executive Orders 12866 and 12988 and by the Presidential

Memorandum of June 1, 1998, to write all rules in plain language. This means that each rule we publish must:

- (1) Be logically organized;
- (2) Use the active voice to address readers directly;
- (3) Use clear language rather than jargon;
- (4) Be divided into short sections and sentences; and
- (5) Use lists and tables wherever possible.

If you feel that we have not met these requirements, send us comments by one of the methods listed in the **ADDRESSES** section. To better help us revise the rule, your comments should be as specific as possible. For example, you should tell us the numbers of the sections or paragraphs that are unclearly written, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

References Cited

A complete list of references cited in this rulemaking is available on the Internet at <http://www.regulations.gov> under Docket No. FWS–R4–ES–2013–0040 and upon request from the Caribbean Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Authors

The primary authors of this proposed rule are the staff members of the Caribbean Ecological Services Field Office.

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Proposed Regulation Promulgation

Accordingly, we propose to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—[AMENDED]

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361-1407; 1531-1544; 4201-4245, unless otherwise noted.

2. In § 17.96, amend paragraph (a) as follows:

- a. By adding entries for Family Agavaceae, Family Boraginaceae, and Family Ericaceae, in alphabetical order;
- b. By adding an entry for *Agave eggersiana* in alphabetical order under Family

Agavaceae;

c. By adding an entry for *Gonocalyx concolor* in alphabetical order under Family

Ericaceae; and

d. By adding an entry for *Varronia rupicola* in alphabetical order under Family

Boraginaceae.

The additions read as follows:

§ 17.96 Critical habitat—plants.

(a) *Flowering plants.*

Family Agavaceae: *Agave eggersiana*

(1) Critical habitat units are depicted for St. Croix, USVI, on the maps in this entry.

(2) Within these areas, the primary constituent elements of the physical or biological features essential to the conservation of *Agave eggersiana* consist of these components:

(i) Areas consisting of coastal cliffs and dry coastal shrublands.

(A) Coastal cliff habitat includes:

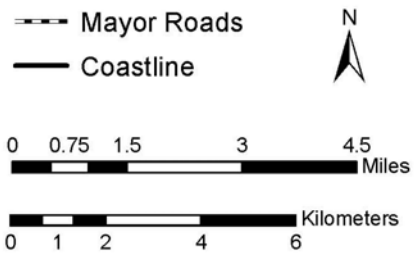
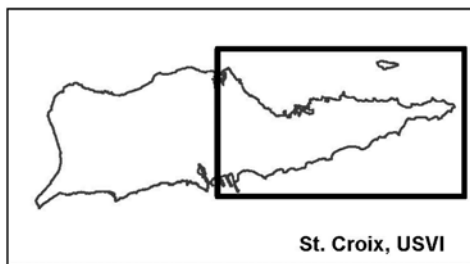
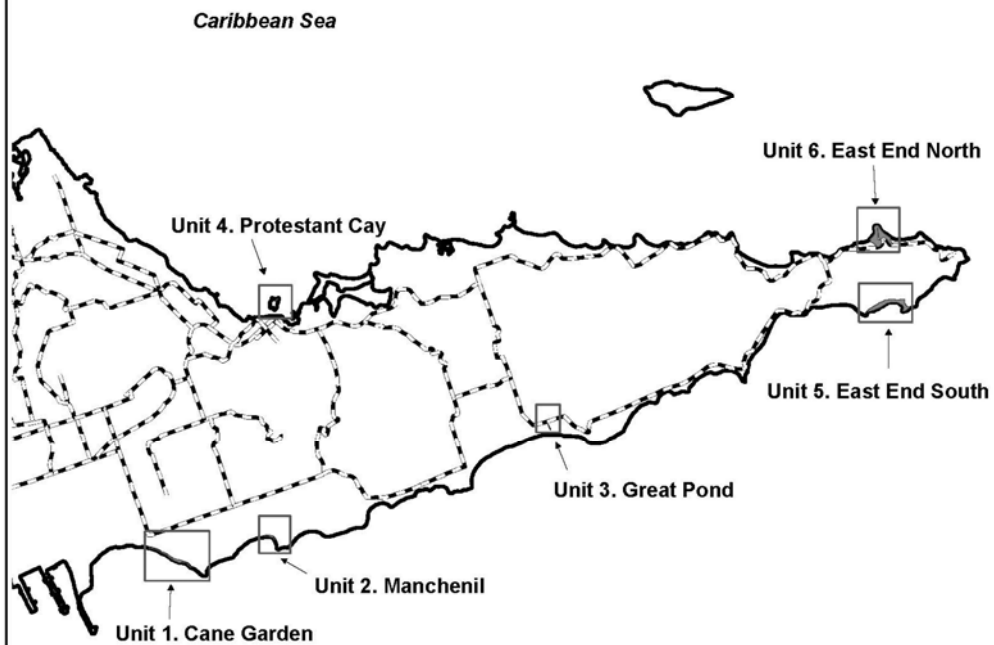
(1) Bare rock; and

(2) Sparse vegetation.

(B) Dry coastal shrubland habitat includes:

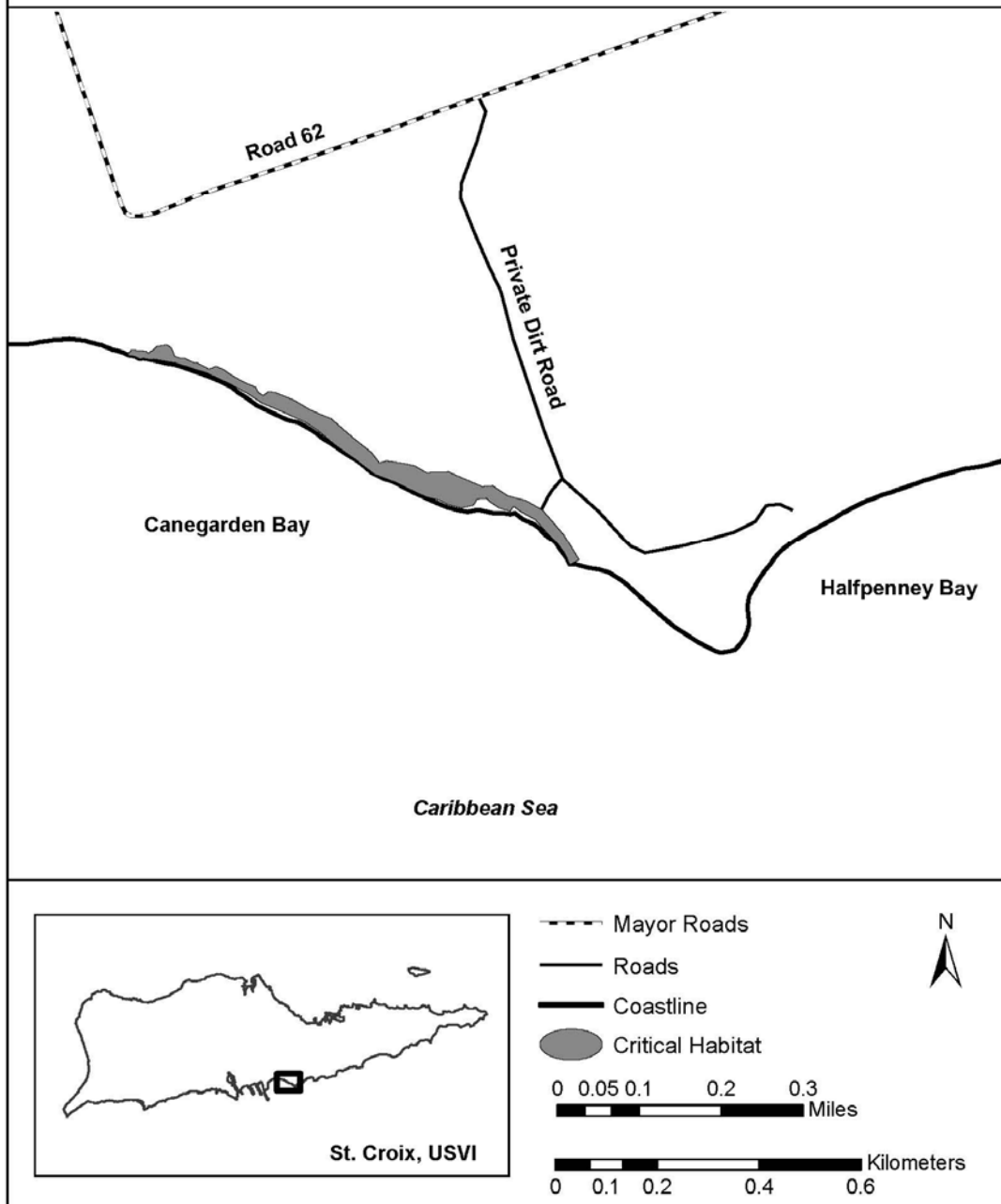
- (1) Dry forest structure; and
- (2) A plant community of predominately native vegetation.
- (ii) Well-drained soils from the series Cramer, Glynn, Hasselberg, Southgate, and Victory.
- (iii) Habitat of sufficient area to sustain viable populations in the coastal cliffs and dry coastal shrublands described in paragraphs (2)(i)(A) and (2)(i)(B) of this entry.
- (3) Critical habitat does not include manmade structures (such as bridges, docks, aqueducts, and paved areas) and the land on which they are located existing within the legal boundaries on the effective date of this rule.
- (4) *Critical habitat map units.* Data layers defining map units were created on a base of an aerial image (USCOE) and USFS-IITF Landcover GAP raster. Critical habitat units were then mapped using Universal Transverse Mercator (UTM) North American Datum (NAD) 1983 Zone 20 N coordinates. The maps in this entry, as modified by any accompanying regulatory text, establish the boundaries of the critical habitat designation. The coordinates or plot points or both on which each map is based are available to the public at the Service's Internet site at <http://www.fws.gov/caribbean/es>, at <http://www.regulations.gov> at Docket No. FWS-R4-ES-2013-0040, and at the field office responsible for this designation. You may obtain field office location information by contacting one of the Service regional offices, the addresses of which are listed at 50 CFR 2.2.
- (5) Index map of critical habitat units for *Agave eggersiana* follows:

Index Map of All Critical Habitat Units for *Agave eggersiana*



(6) Unit 1: Cane Garden, Estate Canegarden and Estate Peters Mindle, Christiansted, St. Croix, USVI. Map of Unit 1 follows:

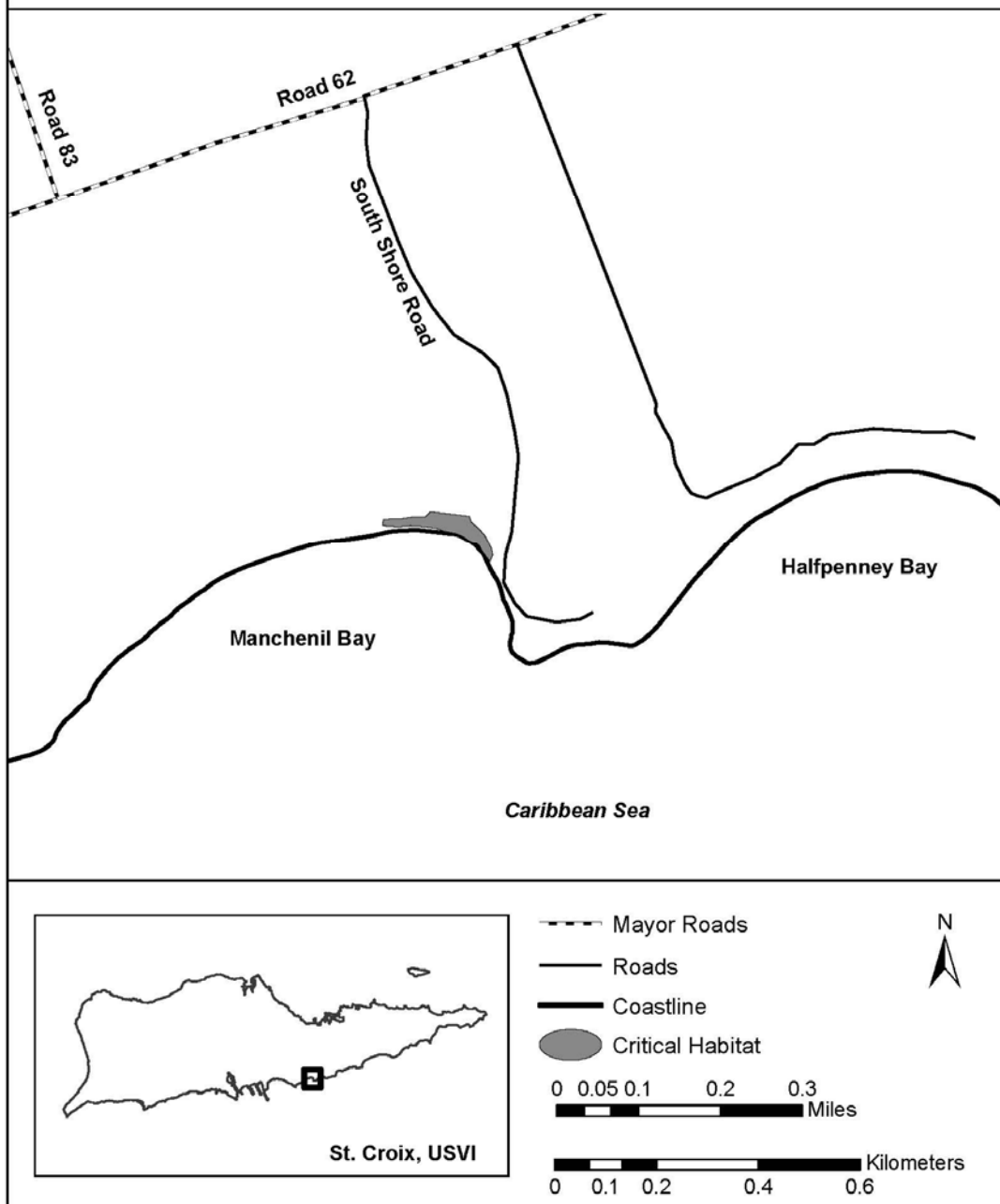
Map for Unit 1 Cane Garden Critical Habitat for *Agave eggersiana*



(7) Unit 2: Manchenil, Estate Granard, Christiansted, St. Croix, USVI. Map of Unit 2

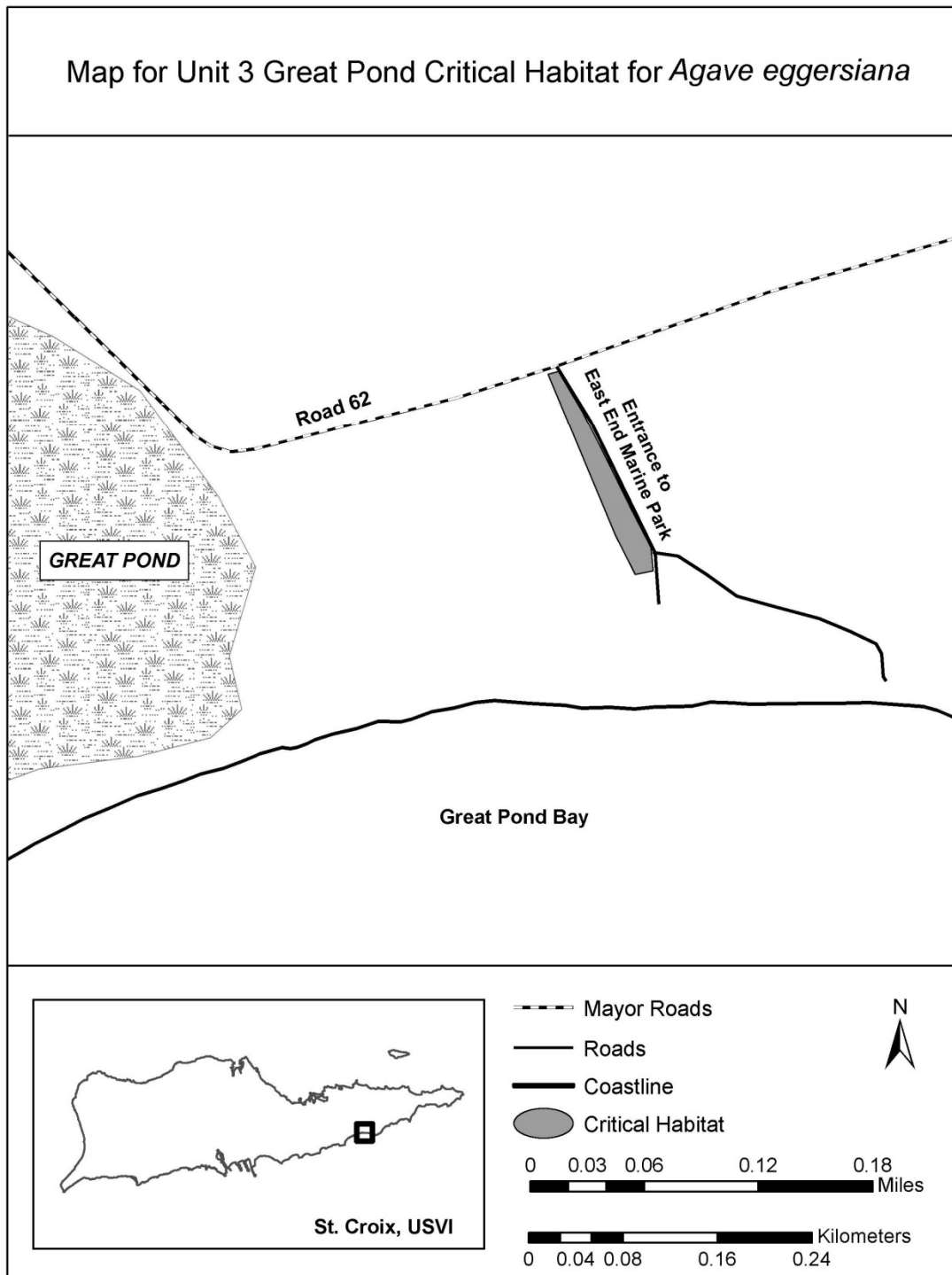
follows:

Map for Unit 2 Manchenil Critical Habitat for *Agave eggersiana*

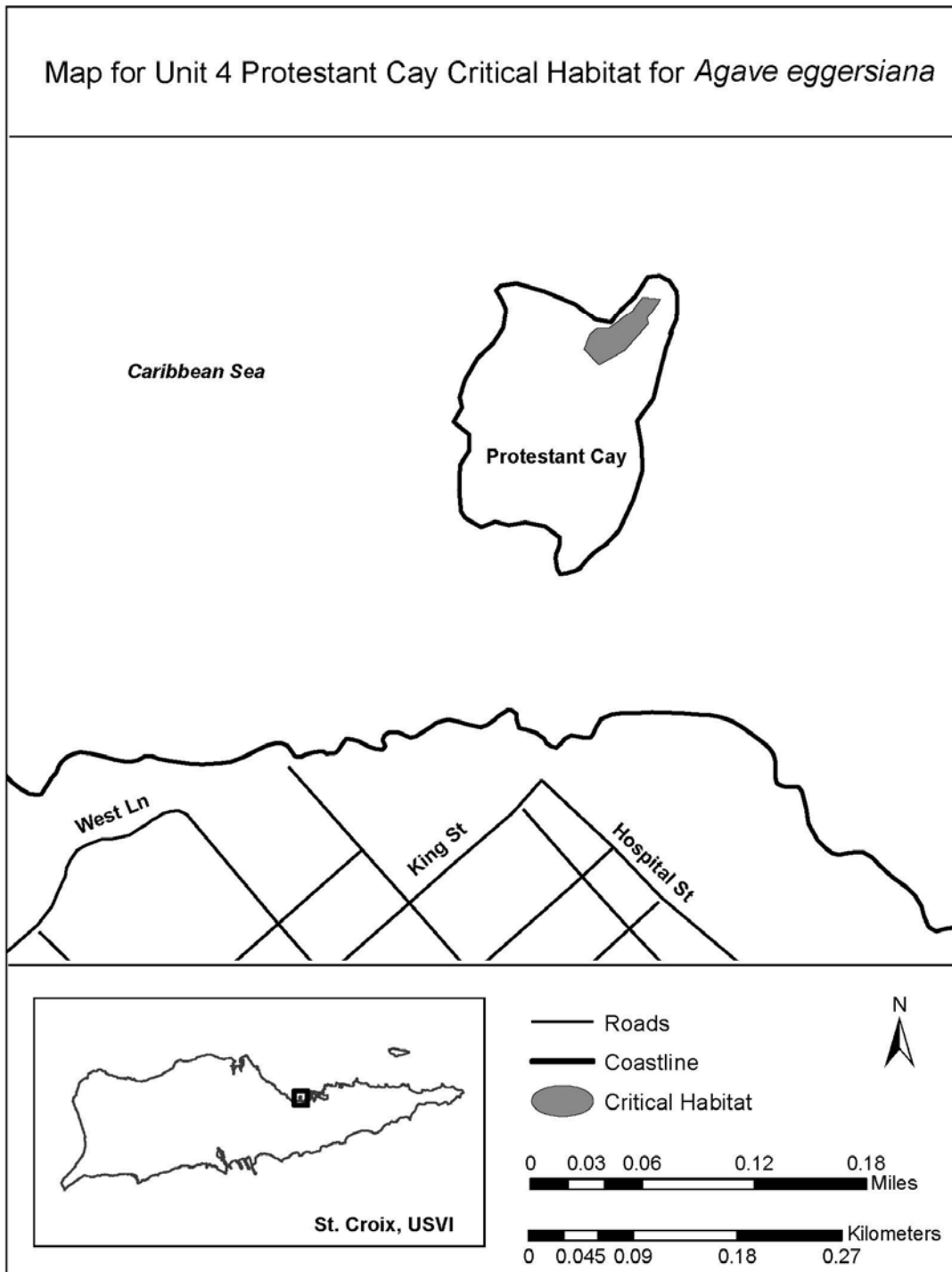


(8) Unit 3: Great Pond, Estate Great Pond, Christiansted, St. Croix, USVI. Map of Unit 3

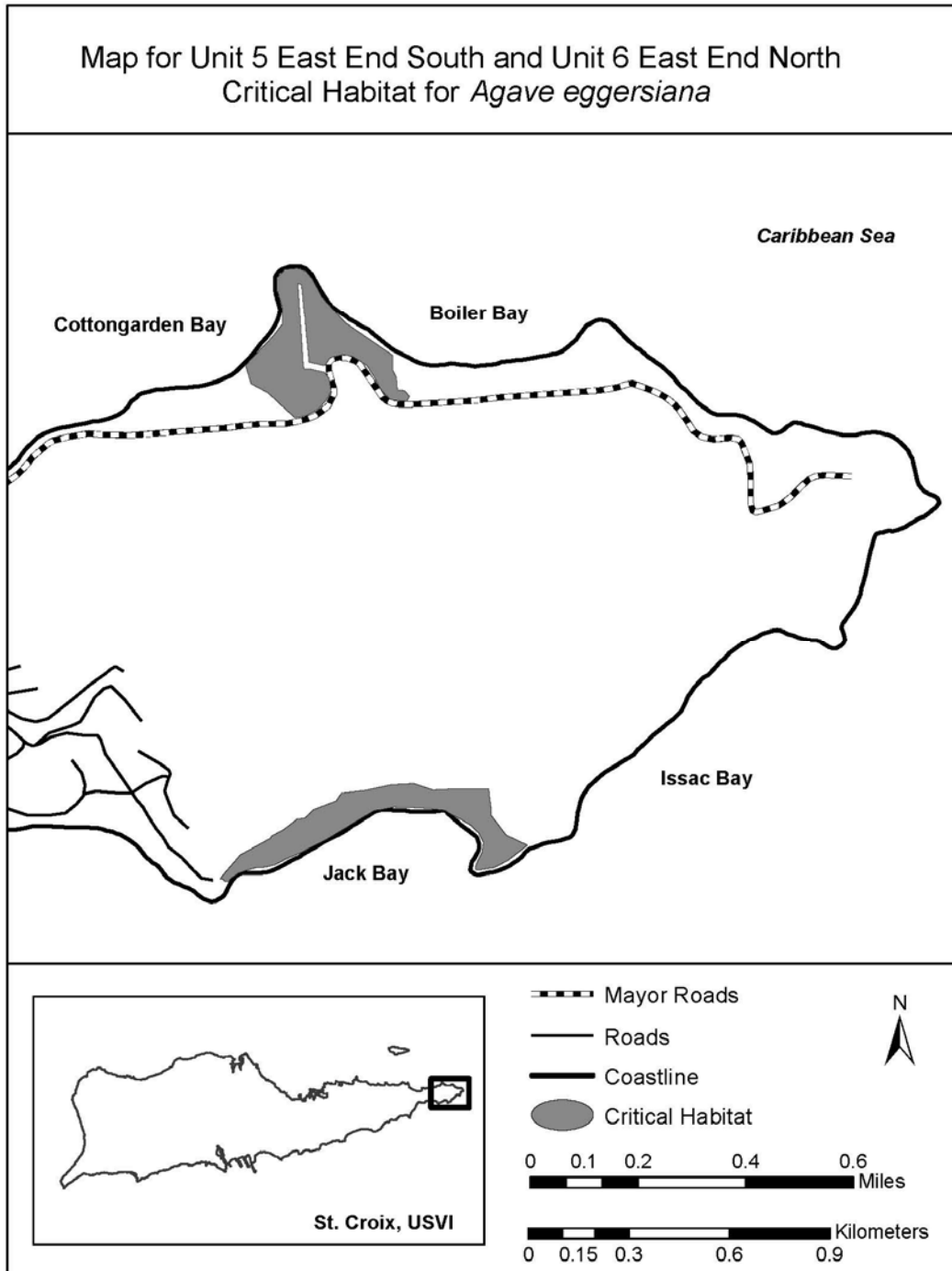
follows:



(9) Unit 4: Protestant Cay, Protestant Cay, St. Croix, USVI. Map of Unit 4 follows:



(10) Unit 5: East End South, Estate Jack's Bay and Estate Issac's Bay, Christiansted, St. Croix, USVI. Map of Units 5 and 6 follows:



(11) Unit 6: East End North, Estate Cotton Garden, Christiansted, St. Croix, USVI.

Map of Unit 6 is provided at paragraph (10) of this entry.

* * * * *

Family Boraginaceae: *Varronia rupicola*

(1) Critical habitat units are depicted for the municipalities of Guánica, Yauco, Guayanilla, Peñuelas, Ponce, and Vieques, Commonwealth of Puerto Rico, on the maps in this entry.

(2) Within these areas, the primary constituent elements of the physical or biological features essential to the conservation of *Varronia rupicola* consist of the following components:

(i) Remnants of native shrubland and scrubland forest on limestone substrate within the subtropical dry forest life zone. Dry shrubland and scrubland forest includes:

(A) Shrubland vegetation with canopy from 6.5 to 9.8 ft (2 to 3 m) high;

(B) Limestone pavement;

(C) Associated native vegetation; and

(D) A shrub layer dominated by *Croton humilis*, *Eupatorium sinuatum*, *Lantana reticulata*, and *Turnera diffusa*.

(ii) Semi-deciduous dry forest on limestone substrate within the subtropical dry forest life zone. Dry limestone semi-deciduous forest includes:

(A) Low forest with canopy from 8 to 15 ft (3 to 5 m) high;

(B) Limestone pavement;

(C) Associated dry forest native vegetation; and

(D) A shrub layer dominated by *Croton humilis*, *Eupatorium sinuatum*, *Lantana reticulata*, and *Turnera diffusa*.

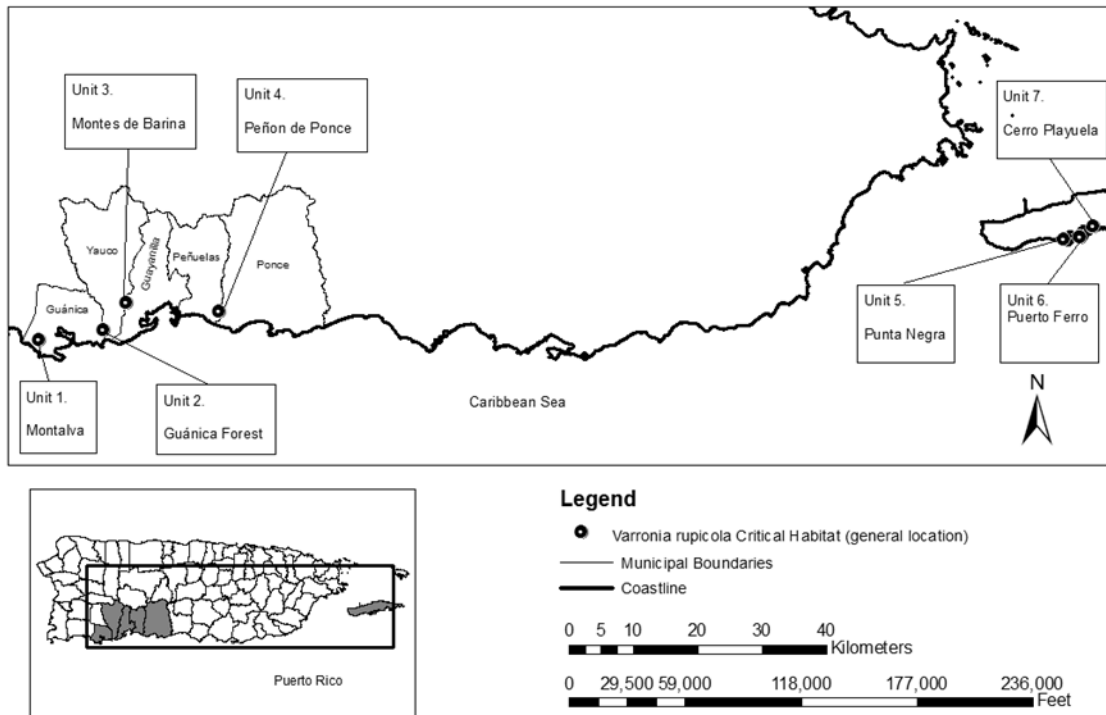
(iii) The type locations described paragraphs (2)(i) and (2)(ii) of this entry for this species should have shallow and alkaline soils derived from limestone rock and an average rainfall of 34 in (86 cm).

(3) Critical habitat does not include manmade structures (such as houses, bridges, aqueducts, and paved areas) and the land on which they are located existing within the legal boundaries on the effective date of this rule.

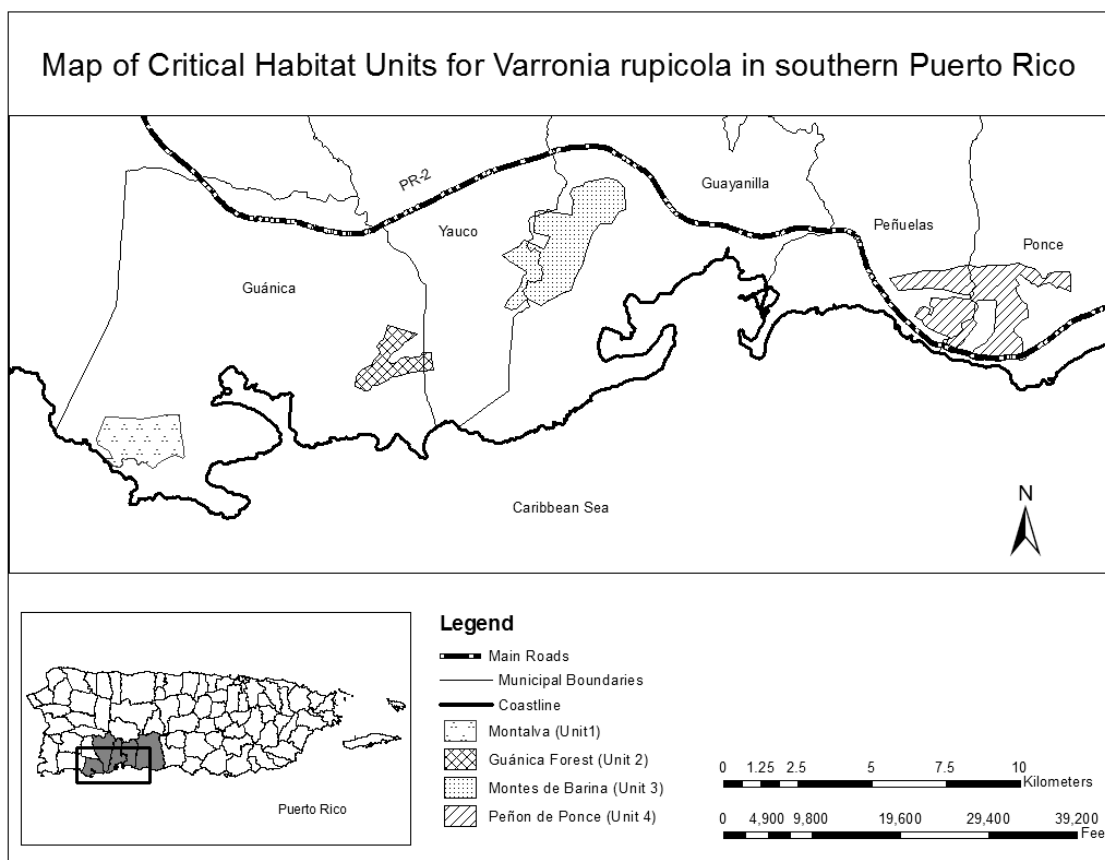
(4) *Critical habitat map units.* Data layers defining map units were created on a base of an aerial image (ESRI image Basemap) and USFS-IITF Landcover GAP raster. Critical habitat units were then mapped using the Geographic Coordinate System-World Geodetic System (WGS) 1984 datum. The maps in this entry, as modified by any accompanying regulatory text, establish the boundaries of the critical habitat designation. The coordinates or plot points or both on which each map is based are available to the public at the Service's Internet site, <http://www.fws.gov/caribbean/es>, at <http://www.regulations.gov> at Docket No. FWS-R4-ES-2013-0040, and at the field office responsible for this designation. You may obtain field office location information by contacting one of the Service regional offices, the addresses of which are listed at 50 CFR 2.2.

(5) Index map of critical habitat units for *Varronia rupicola* follows:

Index Map of All Critical Habitat Units for *Varronia rupicola*



(6) Unit 1: Montalva, municipality of Guánica, Puerto Rico. Map of Units 1, 2, 3, and 4 follows:

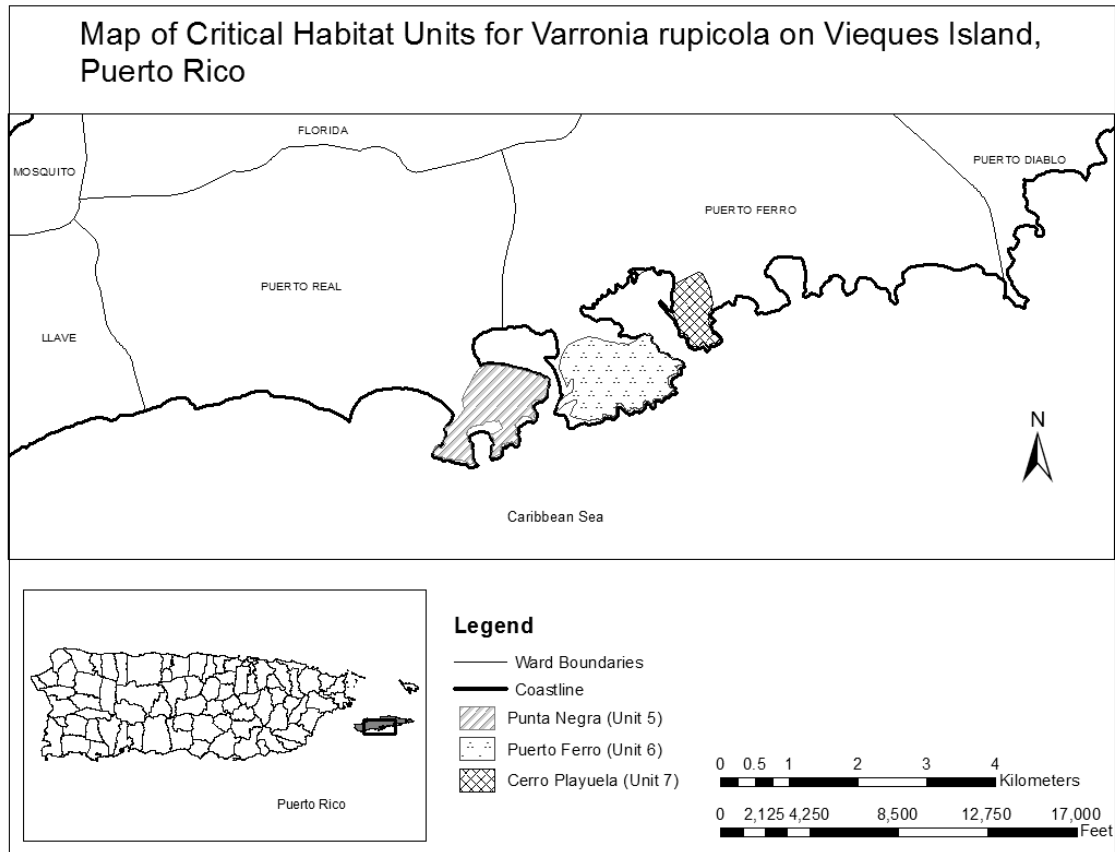


(7) Unit 2: Guánica Commonwealth Forest, municipalities of Guánica and Yauco, Puerto Rico. Map of Unit 2 is provided at paragraph (6) of this entry.

(8) Unit 3: Montes de Barina, municipalities of Yauco and Guayanilla, Puerto Rico. Map of Unit 3 is provided at paragraph (6) of this entry.

(9) Unit 4: Peñon de Ponce, municipalities of Peñuelas and Ponce, Puerto Rico. Map of Unit 4 is provided at paragraph (6) of this entry.

(10) Unit 5: Punta Negra, municipality of Vieques, Puerto Rico. Map of Units 5, 6, and 7 follows:



(11) Unit 6: Puerto Ferro, municipality of Vieques, Puerto Rico. Map of Unit 6 is provided at paragraph (10) of this entry.

(12) Unit 7: Cerro Playuela, municipality of Vieques, Puerto Rico. Map of Unit 7 is provided at paragraph (10) of this entry.

* * * * *

Family Ericaceae: *Gonocalyx concolor*

(1) Critical habitat units are depicted for the municipalities of Cayey, San Lorenzo, and Patillas, Commonwealth of Puerto Rico, on the maps in this entry.

(2) Within these areas, the primary constituent elements of the physical or biological features essential to the conservation of *Gonocalyx concolor* consist of these components:

(i) Elfin forest at elevations over 2,900 ft (880 m) in Cerro La Santa, Puerto Rico, which includes:

(A) Forest with single canopy layer with trees seldom exceeding 22 ft (7 m) in height.

(B) Associated native vegetation dominated by species such as *Tabebuia schumanniana*, *Tabebuia rigida*, *Ocotea spathulata*, *Eugenia borinquensis*, *Clusia minor*, and *Prestoea acuminata* var. *montana*, native ferns, and dense cover with epiphytes, including bromeliads and mosses.

(ii) Ausubo forest at elevations between 2,000 to 2,300 ft (620 to 720 m) in the Charco Azul, which includes:

(A) Forest with single canopy layer with trees exceeding 22 ft (7 m) in height.

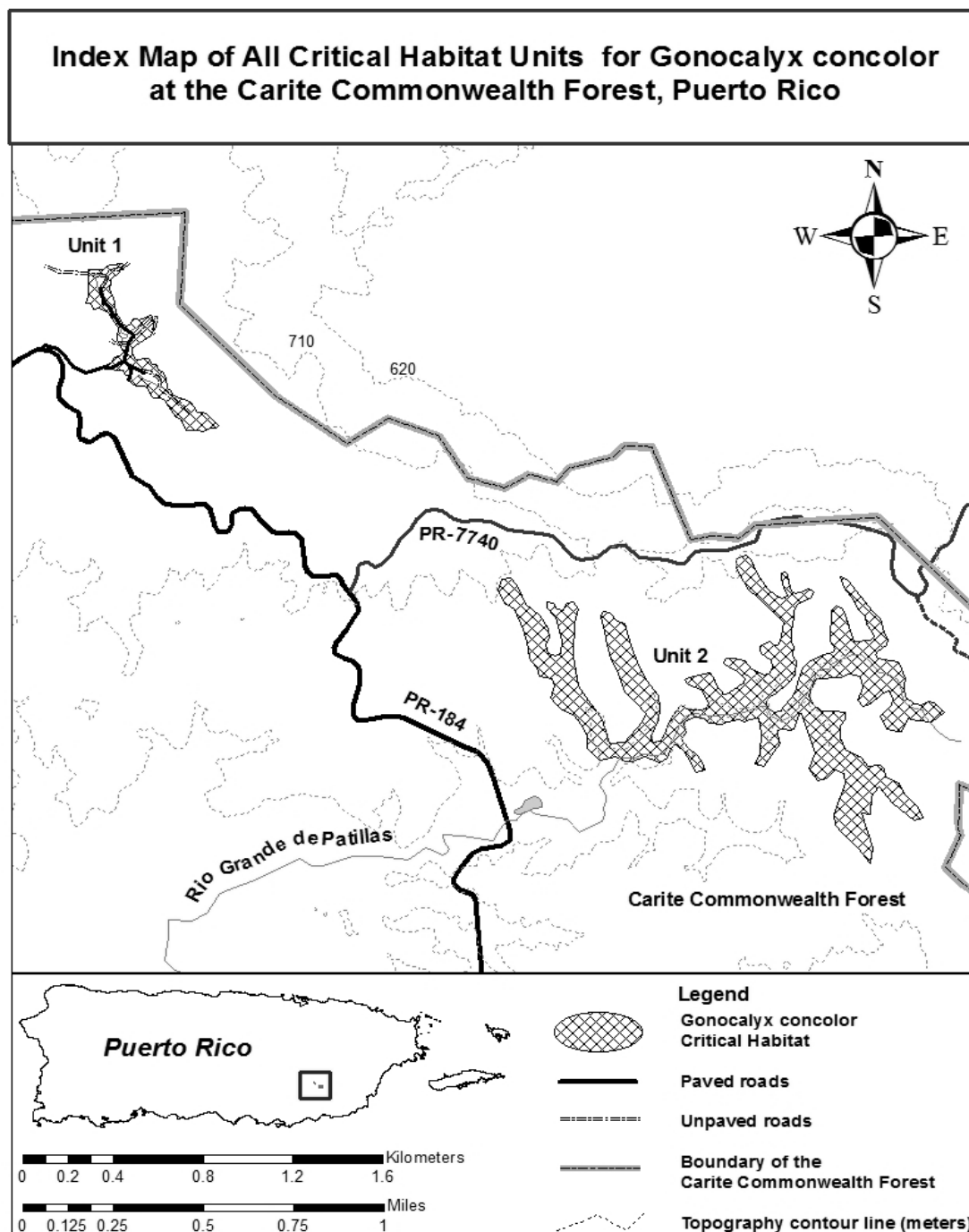
(B) Plant association comprised by few species of native trees and associated native vegetation (e.g., *Manilkara bidentata*, *Dacryodes excelsa*, *Guarea guidonia*, and *Cyrilla racemiflora*), native ferns, and dense cover with epiphytes, including bromeliads and mosses.

(iii) The type locations described in paragraphs (2)(i) and (2)(ii) of this entry for this species should have mean annual precipitation of 88.7 in (225.3 cm), mean annual temperature of 72.3 °F (22.7 °C), and Los Guineos type of soil (i.e., very deep, acidic, clayey, well-drained soils on side slopes of mountains).

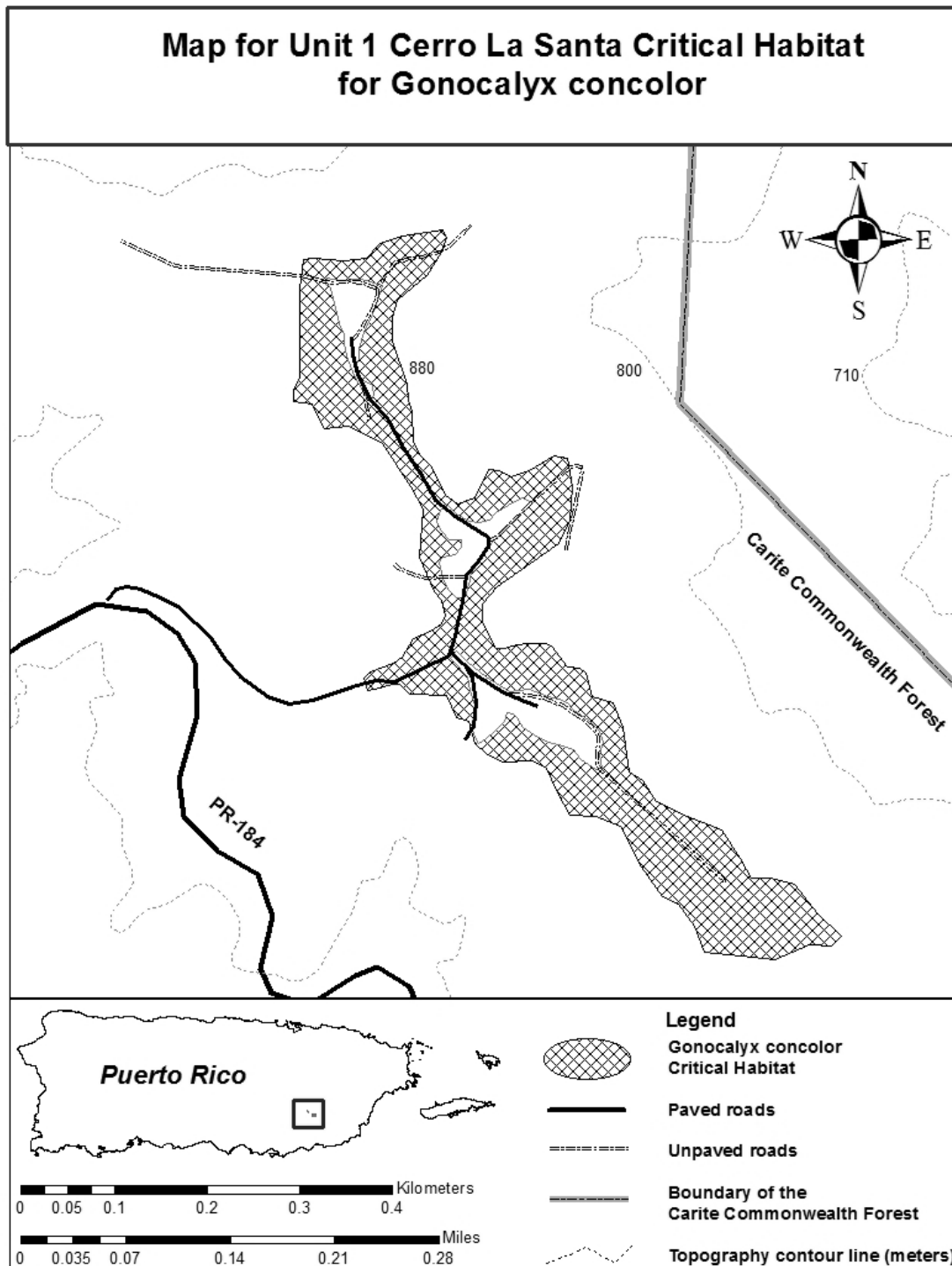
(3) Critical habitat does not include manmade structures (such as bridges, docks, and aqueducts) and the land on which they are located existing within the legal boundaries on the effective date of this rule.

(4) *Critical habitat map units.* Data layers defining map units were created on a base of U.S. Geological Survey digital ortho-photo quarter-quadrangles, and critical habitat units were then mapped using aerial photos (ArcGis) to limits of the boundaries of the elfin forest and ausubo forest. Critical habitat units were then mapped using ArcMap version 10 (Environmental Systems Research Institute, Inc.), a Geographic Information Systems program. The maps in this entry, as modified by any accompanying regulatory text, establish the boundaries of the critical habitat designation. The coordinates or plot points or both on which each map is based are available to the public at the Service's Internet site at <http://www.fws.gov/caribbean/es>, at <http://www.regulations.gov> at Docket No. FWS-R4-ES-2013-0040, and at the field office responsible for this designation. You may obtain field office location information by contacting one of the Service regional offices, the addresses of which are listed at 50 CFR 2.2.

(5) Index map of critical habitat units for *Gonocalyx concolor* follows:

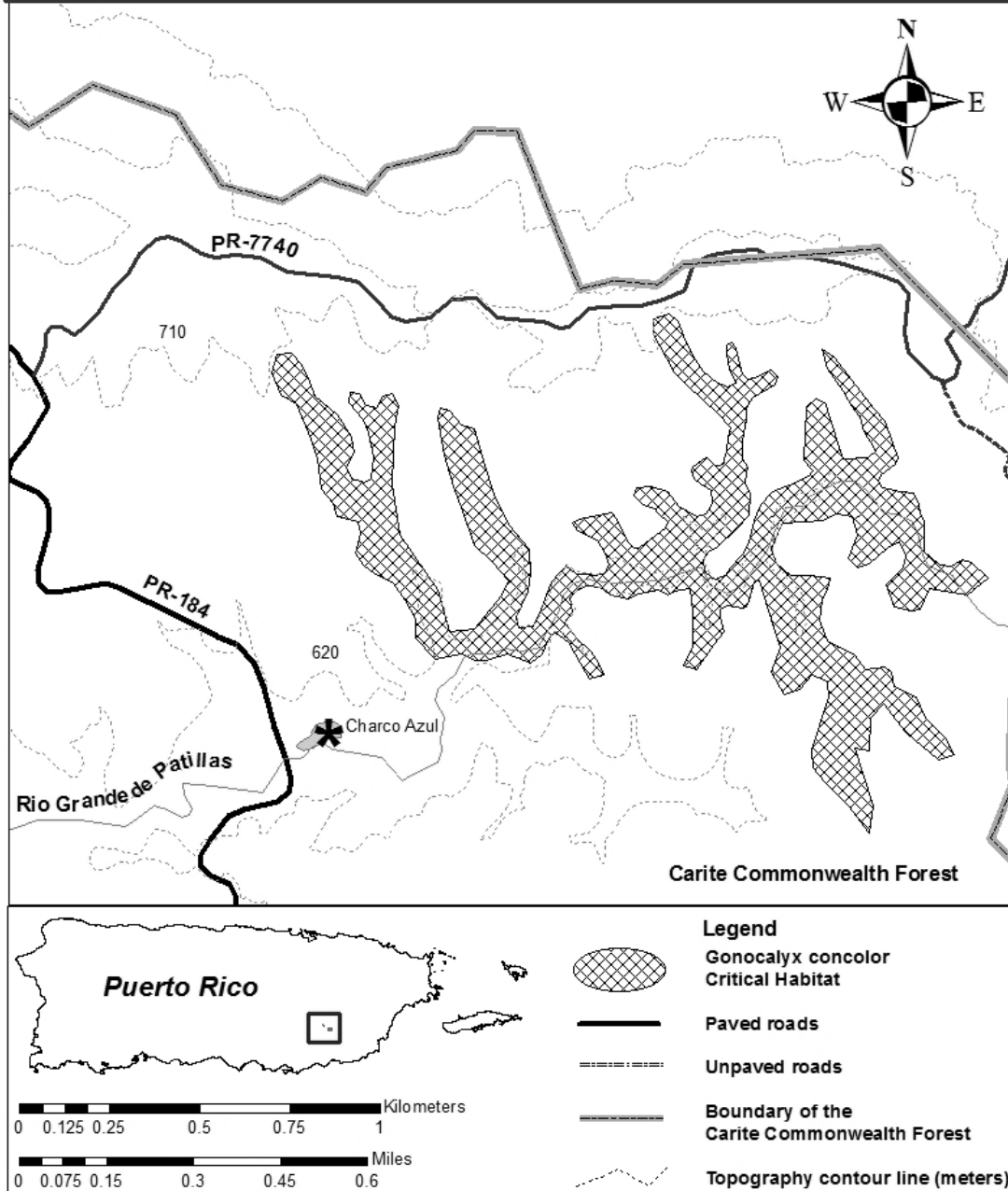


(6) Unit 1: Cerro La Santa, Carite Commonwealth Forest, Puerto Rico. Map of Unit 1 follows:



(7) Unit 2: Charco Azul, Carite Commonwealth Forest, Puerto Rico. Map of Unit 2 follows:

Map for Unit 2 Charco Azul Critical Habitat for *Gonocalyx concolor*



* * * * *

Dated: September 9, 2013.

Rachel Jacobson

Principal Deputy Assistant Secretary for Fish Wildlife and Parks

Billing Code 4310-55-P

<FRDOC> [FR Doc. 2013-24169 Filed 10-23-13; 8:45 am]

<BILCOD>BILLING CODE 4310-55-P

[FR Doc. 2013-24169 Filed 10/21/2013 at 8:45 am; Publication Date: 10/22/2013]